SERVICE MANUAL

W880CU

Notebook Computer

W880CU

Service Manual

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About this Manual

This manual is intended for service personnel who have completed sufficient training to undertake the maintenance and inspection of personal computers.

It is organized to allow you to look up basic information for servicing and/or upgrading components of the ***W880CU*** series notebook PC.

The following information is included:

Chapter 1, Introduction, provides general information about the location of system elements and their specifications.
Chapter 2, Disassembly, provides step-by-step instructions for disassembling parts and subsystems and how to upgrade elements of the system.

Appendix A, Part Lists
Appendix B, Schematic Diagrams
Appendix C, Updating the FLASH ROM BIOS

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock and injury to persons when using any electrical equipment:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit with an AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19V, 9.47A (**180** Watts) minimum AC/DC Adapter.

CAUTION

Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.

TO REDUCE THE RISK OF FIRE, USE ONLY NO. 26 AWG OR LARGER, TELECOMMUNICATION LINE CORD

This Computer's Optical Device is a Laser Class 1 Product

Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*

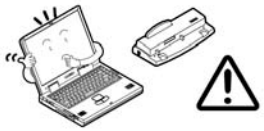
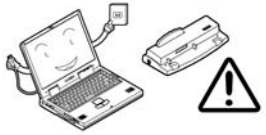
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface which will block the vents.*

3. **Follow the proper working procedures for the computer**. Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*

4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*
	

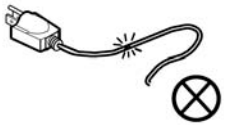
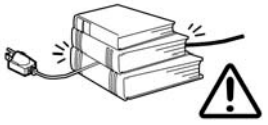
Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

Battery Guidelines

The following can also apply to any backup batteries you may have.

- If you do not use the battery for an extended period, then remove the battery from the computer for storage.
- Before removing the battery for storage charge it to 60% - 70%.
- Check stored batteries at least every 3 months and charge them to 60% - 70%.

Battery Disposal

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Battery Level

Click the battery icon in the taskbar to see the current battery level and charge status. A battery that drops below a level of 10% will not allow the computer to boot up. Make sure that any battery that drops below 10% is recharged within one week.

Related Documents

You may also need to consult the following manual for additional information:

User's Manual on Disc
This describes the notebook PC's features and the procedures for operating the computer and its ROM-based setup program. It also describes the installation and operation of the utility programs provided with the notebook PC.

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Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the ***W880CU*** series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in *User's Manual*. That manual is shipped with the computer.

Operating systems (e.g. *Windows Vista, Windows 7,* etc.) have their own manuals as do application software (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The ***W880CU*** series notebook is designed to be upgradeable. See ***Disassembly on page 2 - 1*** for a detailed description of the upgrade procedures for each specific component. Please note the warning and safety information indicated by the " " symbol.

The balance of this chapter reviews the computer's technical specifications and features.

Specifications

Latest Specification Information

The specifications listed here are correct at the time of sending them to the press. Certain items (particularly processor types/speeds) may be changed, delayed or updated due to the manufacturer's release schedule. Check with your service center for more details.

CPU

The CPU is not a user serviceable part. Accessing the CPU in any way may violate your warranty.

Processor

Intel® Core i7 Mobile Processor

i7-920XM (2.0GHz)

8MB L3 Cache, 1333MHz FSB, TDP: 55W

i7-840QM (1.86GHz), i7-820QM (1.73GHz)

8MB L3 Cache, 1333MHz FSB, TDP: 45W

i7-740QM (1.73GHz), i7-720QM (1.6GHz)

6MB L3 Cache, 1333MHz FSB, TDP: 45W

& FSB 1333MHz - TDP 45W

rPGA988A Package

Core Logic

Intel® PM55 Chipset

Display

17.3” HD+(1600 * 900) / FHD (1920 * 1080) 16:9 Wide Screen LED Backlit Panel

Memory

Two 64-bit Wide **DDRIII (DDR3)** Data Channels

Two 204 Pin SO-DIMM Sockets Supporting **DDRIII (DDR3)** 1333MHz

Memory Expandable up to **8GB** Using 4GB DDRIII Modules

BIOS

One 32Mb SPI Flash ROM

Phoenix™ BIOS

Video Adapter

nVIDIA® GeForce GTX 485M PCIe * 16 Video Card

2GB GDDR5 Video RAM on board

Supports Microsoft DirectX® 11

Supports HDCP/HDMI 1.4/DVI Dual Link

Keyboard & Pointing Device

Full Size WinKey Keyboard

Built-in TouchPad with Multi Gesture Function

Three Instant Keys (WWW, E-Mail, Silent Mode)

Storage

One Changeable 12.7mm(h) Optical Device (CD/DVD) Type Drive (Super Multi Drive Module or Blu-Ray Combo Drive Module)

Changeable 2.5" 9.5 mm (h) **SATA** (Serial) HDD (RAID 0/1 Support)

Card Reader

Embedded 7-in-1 Card Reader (MS/ MS Pro/ SD/ Mini SD/ MMC/ RS MMC/ MS Duo)

Note: MS Duo/ Mini SD/ RS MMC Cards require a PC adapter

Slots

One ExpressCard/34/54 Slot

Two Mini-Card Slots (USB/PCIe):

Slot 1 for Half Mini-Card WLAN Module with PCIe Interface (**Factory Option**)

Slot 2 for TV Tuner Card with USB Interface (**Factory Option**)

Security

Security (Kensington® Type) Lock Slot

BIOS Password

Fingerprint Reader Module (**Factory Option**)

Power Management

Supports Wake on LAN
Supports Wake on USB
Supports Resume From Modem Ring

Audio

High Definition Audio Compliant Interface
3D Stereo Enhanced Sound System
S/PDIF Digital Output
Built-In Microphone

5 * Built-In Speakers (Supporting 2 Channel Stereo)

Interface

Two USB 2.0 Ports
Two USB 3.0 Ports
One eSATA Port
One IEEE1394a Port
One DVI-I Out Port
One HDMI Out Port
One Headphone-Out Jack
One Microphone-In Jack
One S/PDIF-Out Jack
One Line-In Jack
One RJ-11 Jack
One RJ-45 LAN Jack
One DC-In Jack

Note: External 5.1CH Audio Output Supported by Headphone, Microphone and Line-In Jacks

Power

Full Range AC/DC Adapter
AC input 100 - 240V, 50 - 60Hz,
DC Output 19V, 9.47A (180W)
Removable Polymer Smart Lithium-Ion Battery Pack, 42.18WH

Dimensions & Weight

412mm (w) * 279mm (d) * 39-56.8mm (h)
4kg With ODD & Battery

Communication

Built-In 56K Fax Modem V.90 & V.92 Compliant (**Factory Option**)

Built-In 10/100/1000Mb Base-TX Ethernet LAN

Intel® WiFi Link Wireless LAN Module 5300 3*3 802.11 a/g/n Half Mini-Card with PCIe Interface (**Factory Option**)

3rd Party 802.11b/g/n Half Mini-Card Wireless LAN Module with PCIe Interface (**Factory Option**)

Bluetooth 2.1 + EDR (Enhanced Data Rate) Module with USB Interface (**Factory Option**)

2.0M Pixel USB PC Camera Module with USB Interface (**Factory Option**)

Operating System

Windows® Vista (with Service Pack 2)
Windows® 7

External Locator - Top View with LCD Panel Open

Figure 1
Top View

1. Optional Built-In PC Camera
2. LCD
3. Power Button
4. Speakers
5. LED Status Indicators
6. LED Hot Key Buttons
7. Keyboard
8. Built-In Microphone
9. Touchpad & Buttons

External Locator - Front & Right side Views

Figure 2
Front Views

1. Consumer Infrared Transceiver (for Optional TV Tuner)
2. LED Power Indicators

Figure 3
Right Side Views

1. Headphone-Out Jack
2. Microphone-In Jack
3. Line-In Jack
4. S/PDIF-Out Jack
5. USB 3.0
6. ExpressCard Slot
7. e-SATA Port
8. DVI-Out Port
9. Security (Kensington) Lock Slot

External Locator - Left Side & Rear View

Figure 1
Left Side View

1. RJ-11 Modem Jack
2. Cable (CATV) Antenna Jack*
3. 7-in-1 Card Reader
4. Mini-IEEE 1394 Port
5. USB 2.0 Port
6. Optical Device Drive Bay (for DVD Device)

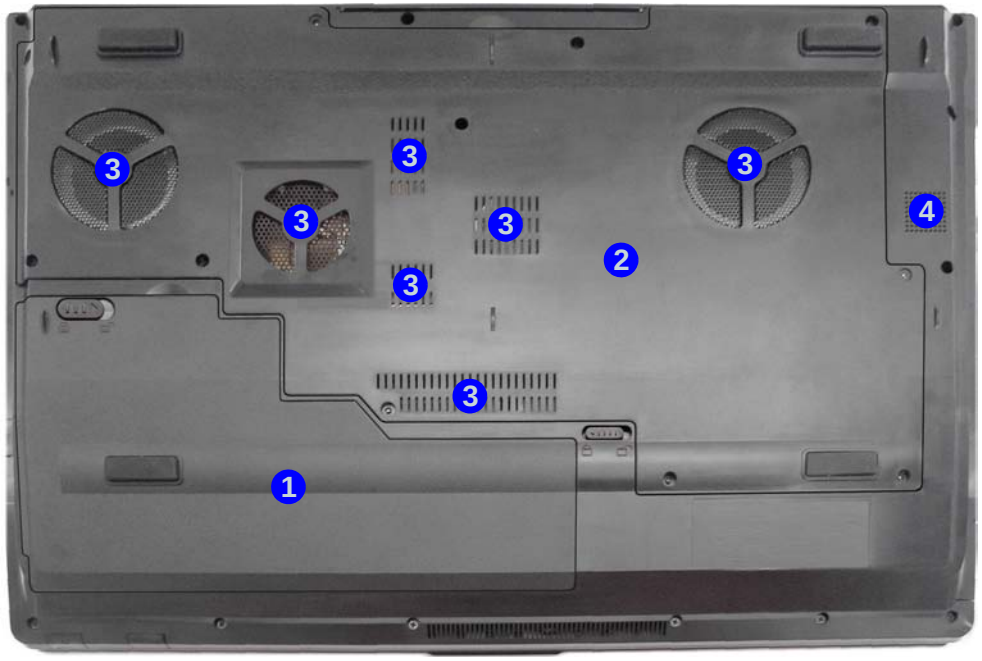
*Enabled with **Optional** TV Tuner Only

Figure 2
Rear View

1. Vent/Fan Intake/ Outlet
2. HDMI-Out Port
3. DC-In Jack
4. 2 * USB Ports
5. Rear Cover

External Locator - Bottom View

Figure 4
Bottom View



1. Battery
2. Component Bay Cover
3. Vent/Fan Intake/ Outlet
4. Speaker

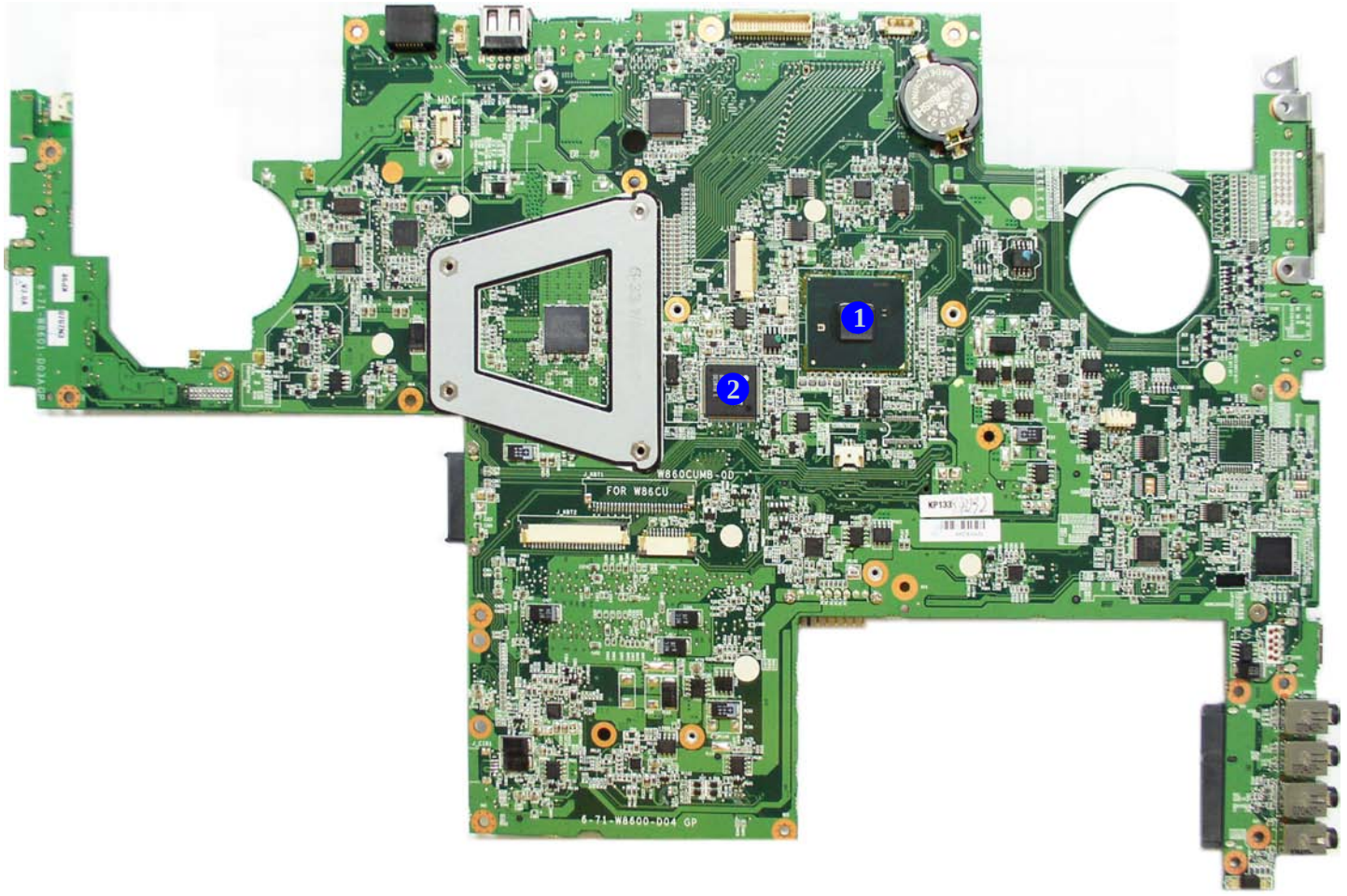
Overheating

To prevent your computer from overheating make sure nothing blocks the vent/fan intakes while the computer is in use.

Mainboard Overview - Top (Key Parts)

Figure 5
Mainboard Top Key Parts

1. South Bridge
2. KBC ITE IT8502E



Mainboard Overview - Bottom (Key Parts)

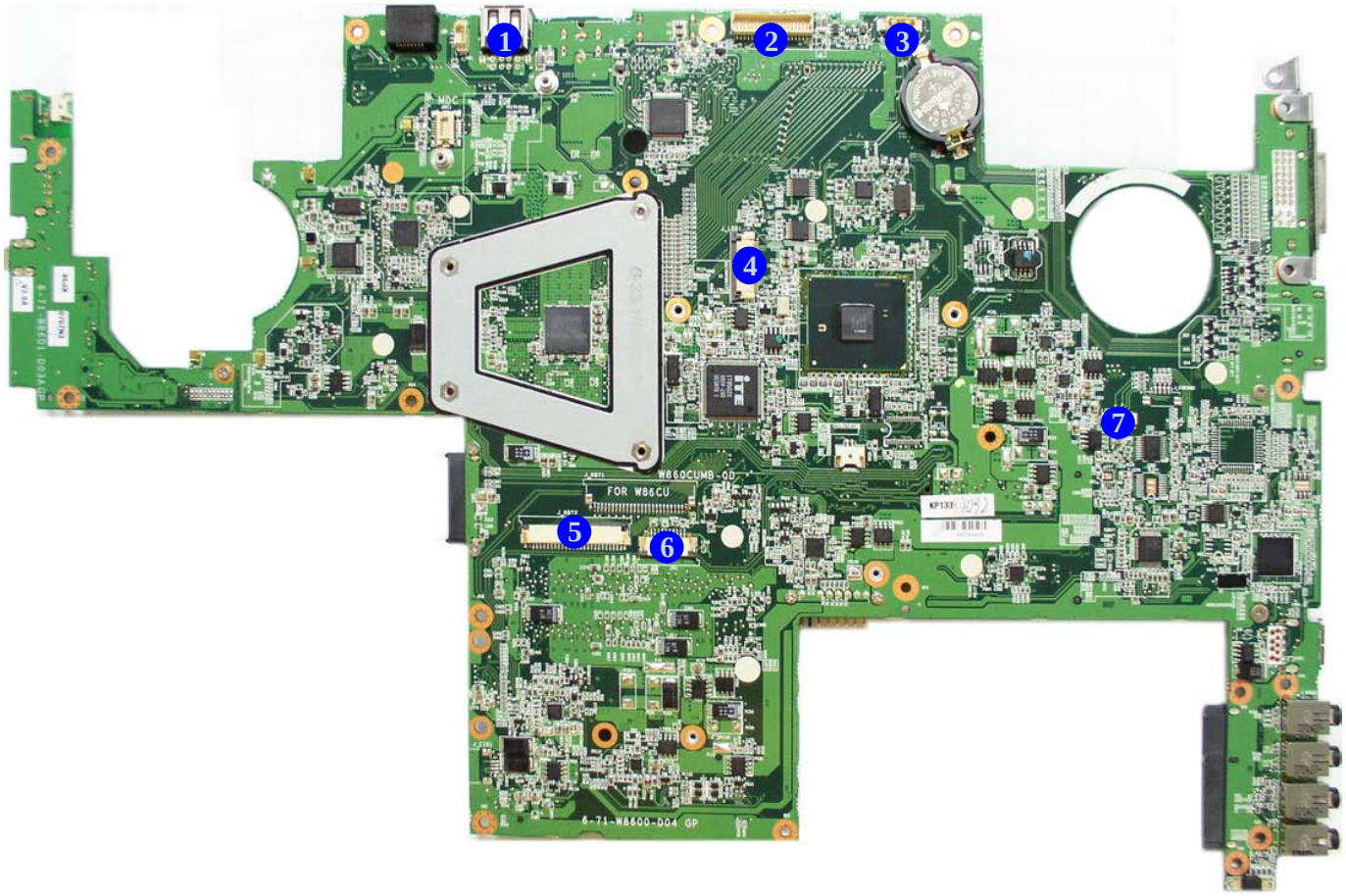
Figure 6
Mainboard Bottom Key Parts

1. CPU Socket (no CPU installed)
2. Card Reader Socket
3. Memory Slots DDR3 SO-DIMM
4. Mini-Card Connector (TV Module)
5. Mini-Card Connector (WLAN Module)
6. ExpressCard Connector
7. VGA-Card Connector

Mainboard Overview - Top (Connectors)

Figure 7
Mainboard Top Connectors

1. USB Port
2. LCD Cable Connector
3. CCD Connector
4. Hotkey & LED Connector
5. Keyboard Cable Connector
6. TouchPad Cable Connector
7. Speaker Connector



Mainboard Overview - Bottom (Connectors)

Figure 8
Mainboard Bottom Connectors

1. USB Port
2. CPU Fan Cable Connector
3. BT Cable Connector
4. CD-ROM Connector
5. System Fan Cable Connector
6. VGA Fan Cable Connector
7. HDD Connector

Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the ***W880CU*** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

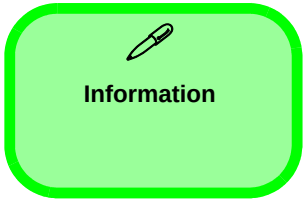
We suggest you completely review any procedure before you take the computer apart.

Procedures such as upgrading/replacing the RAM, optical device and hard disk are included in the User's Manual but are repeated here for your convenience.

To make the disassembly process easier each section may have a box in the page margin. Information contained under the figure # will give a synopsis of the sequence of procedures involved in the disassembly procedure. A box with a lists the relevant parts you will have after the disassembly process is complete. **Note**: The parts listed will be for the disassembly procedure listed ONLY, and not any previous disassembly step(s) required. Refer to the part list for the previous disassembly procedure. The amount of screws you should be left with will be listed here also.

A box with a will also provide any possible helpful information. A box with a contains warnings.

An example of these types of boxes are shown in the sidebar.



NOTE: All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply (the battery is removed too).

Maintenance Tools

The following tools are recommended when working on the notebook PC:

- M3 Philips-head screwdriver
- M2.5 Philips-head screwdriver (magnetized)
- M2 Philips-head screwdriver
- Small flat-head screwdriver
- Pair of needle-nose pliers
- Anti-static wrist-strap

Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors	To release these connectors, use a small flat-head screwdriver to gently pry the locking collar away from its base. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Pressure sockets for multi-wire connectors	To release this connector type, grasp it at its head and gently rock it from side to side as you pull it out. Do not pull on the wires themselves. When replacing the connection, do not try to force it. The socket only fits one way.
Pressure sockets for ribbon connectors	To release these connectors, use a small pair of needle-nose pliers to gently lift the connector away from its socket. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Board-to-board or multi-pin sockets	To separate the boards, gently rock them from side to side as you pull them apart. If the connection is very tight, use a small flat-head screwdriver - use just enough force to start.

Maintenance Precautions

The following precautions are a reminder. To avoid personal injury or damage to the computer while performing a removal and/or replacement job, take the following precautions:

1. **Don't drop it**. Perform your repairs and/or upgrades on a stable surface. If the computer falls, the case and other components could be damaged.
2. **Don't overheat it**. Note the proximity of any heating elements. Keep the computer out of direct sunlight.
3. **Avoid interference**. Note the proximity of any high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage components and/or data. You should also monitor the position of magnetized tools (i.e. screwdrivers).
4. **Keep it dry**. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.
5. **Be careful with power**. Avoid accidental shocks, discharges or explosions.
   - Before removing or servicing any part from the computer, turn the computer off and detach any power supplies.
   - When you want to unplug the power cord or any cable/wire, be sure to disconnect it by the plug head. Do not pull on the wire.
6. **Peripherals** – Turn off and detach any peripherals.
7. **Beware of static discharge**. ICs, such as the CPU and main support chips, are vulnerable to static electricity. Before handling any part in the computer, discharge any static electricity inside the computer. When handling a printed circuit board, do not use gloves or other materials which allow static electricity buildup. We suggest that you use an anti-static wrist strap instead.
8. **Beware of corrosion**. As you perform your job, avoid touching any connector leads. Even the cleanest hands produce oils which can attract corrosive elements.
9. **Keep your work environment clean**. Tobacco smoke, dust or other air-born particulate matter is often attracted to charged surfaces, reducing performance.
10. **Keep track of the components**. When removing or replacing any part, be careful not to leave small parts, such as screws, loose inside the computer.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth.
Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

Disassembly Steps

The following table lists the disassembly steps, and on which page to find the related information. **PLEASE PERFORM THE DISASSEMBLY STEPS IN THE ORDER INDICATED.**

To remove the Battery:

1. Remove the battery *page 2 - 5*

To remove the HDD:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 6*

To remove the Optical Device:

1. Remove the battery *page 2 - 5*
2. Remove the Optical device *page 2 - 9*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 10*

To remove the WLAN Module:

1. Remove the battery *page 2 - 5*
2. Remove the wireless LAN *page 2 - 12*

To remove the Bluetooth Module:

1. Remove the battery *page 2 - 5*
2. Remove the Bluetooth *page 2 - 13*

To remove the 3G:

1. Remove the battery *page 2 - 5*
2. Remove the 3G *page 2 - 14*

To pre-install a CPU/VGA Card

1. Remove the battery *page 2 - 5*
2. Install the CPU *page 2 - 15*
3. Install the video card *page 2 - 16*

To remove and install a Video Card:

1. Remove the battery *page 2 - 5*
2. Remove the video card *page 2 - 17*
3. Install the video card *page 2 - 19*

To remove and install a Processor:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 10*
3. Remove the processor *page 2 - 20*
4. Install the processor *page 2 - 22*

To remove the Keyboard:

1. Remove the battery *page 2 - 5*
2. Remove the video card heatsink *page 2 - 17*
3. Remove the CPU heat sink *page 2 - 20*
4. Remove the keyboard *page 2 - 23*

To remove the Modem Module:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 23*
3. Remove the modem *page 2 - 25*

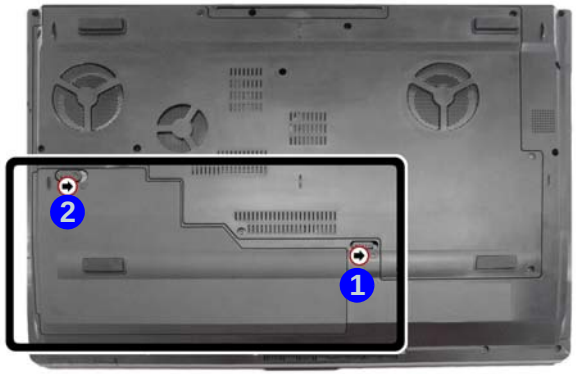
Removing the Battery

1. Turn the computer **off**, and turn it over.
2. Slide the latch 1 in the direction of the arrow (***Figure 1a***).
3. Slide the latch 2 in the direction of the arrow, and hold it in place (***Figure 1a***).
4. Lift the battery 3 out in the direction of the arrow 4 (***Figure 1b***).

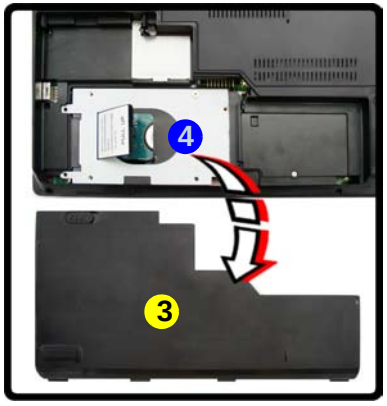
Figure 1
Battery Removal

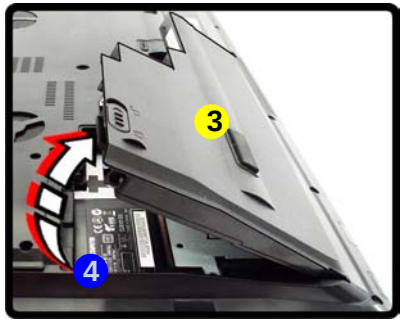
a. Slide the latch and hold in place.
b. Lift the battery out in the direction of the arrow.

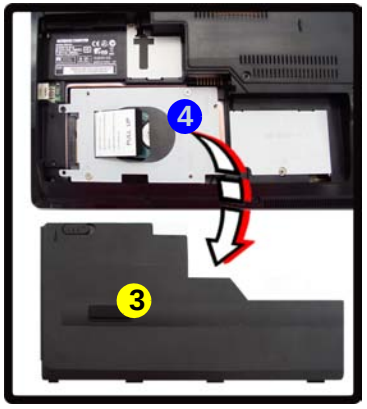
a.



b.







3. Battery

Removing the Hard Disk Drive

Figure 2
HDD Assembly Removal

a. Locate the HDD bay cover and remove the screws.
b. Slide the HDD assembly in the direction of the arrow.

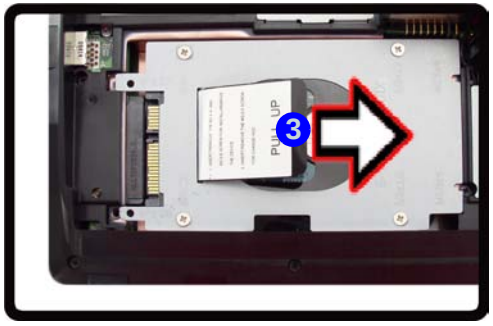
The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard disk.

Hard Disk Upgrade Process

1. Turn **off** the computer, and remove the battery (*page 2 - 5*).
2. The first hard disk bay is located under the battery compartment.
3. Remove screws 1 - 2 from the hard disk cover (*Figure 2a*).
4. Slide the hard disk assembly in the direction of arrow 3 (*Figure 2b*).

a.

b.



- 2 Screws

HDD System Warning

New HDD's are blank. Before you begin make sure:

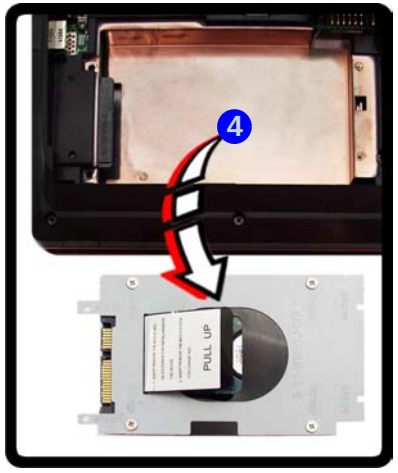
You have backed up any data you want to keep from your old HDD.

You have all the CD-ROMs and FDDs required to install your operating system and programs.

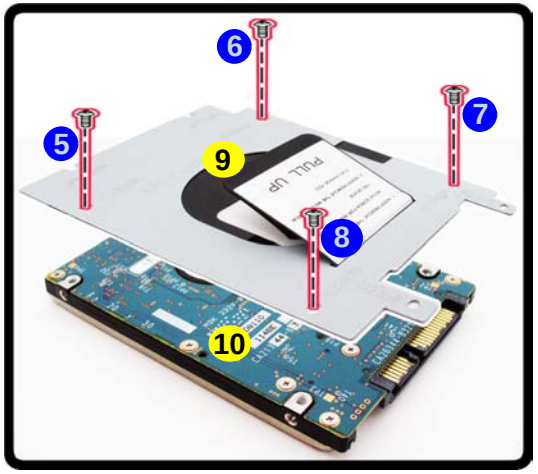
If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

5. Lift the hard disk assembly out of the computer in the direction of arrow 4 (*Figure 3c*).
6. Remove the screws 5 - 8 and the cover bracket 9 from the hard disk 10 (*Figure 3d*).
7. Reverse the process to install a new hard disk (do not forget to replace all the screws and covers).

c.



d.



Hard Disk Screws & Cover

The hard disks and covers pictured here may appear slightly different from your model design (these designs are subject to change and upgrade without notice). Pay careful attention to the screws and cover bracket orientation.

Figure 3
HDD Assembly Removal (cont'd.)

c. Lift the HDD assembly in the direction of the arrow.
d. Remove the screws and cover bracket from the HDD.

9. HDD Cover Bracket
10. HDD

- 4 Screws

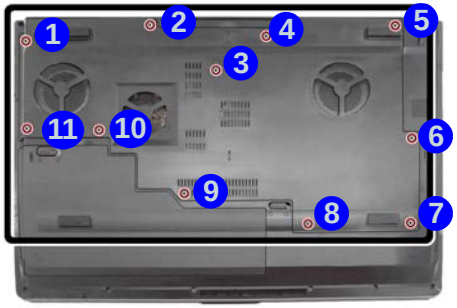
Removing the Hard Disk in the Secondary HDD Bay

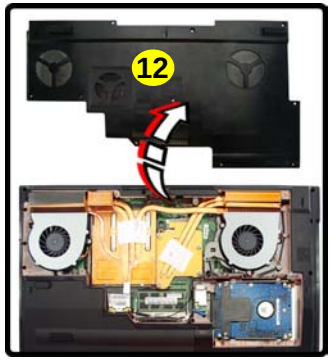
1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the component bay cover and remove screws 1 - 11 (*Figure 4a*).
3. Carefully remove the cover 12 (*Figure 4a*).
4. Slide the hard disk assembly in the direction of the arrow 13 (*Figure 4b*).
5. Lift the hard disk assembly 14 out of the compartment (*Figure 4b*).
6. Remove the screws 15 - 20 to separate the hard disk 14 from the HDD brackets 21 & 22 and tab 23 (*Figure 4c*).
7. Reverse the process to install a new hard disk drive (do not forget to replace all screws and covers).

Figure 4
Secondary HDD Assembly Removal

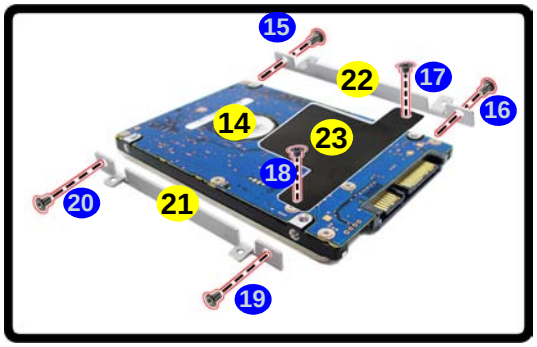
a. Remove the screws and cover.
b. Slide the hard disk assembly out off the computer.
c. Remove the screws to separate the hard disk from the brackets.

a.

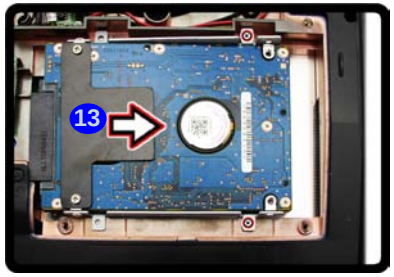


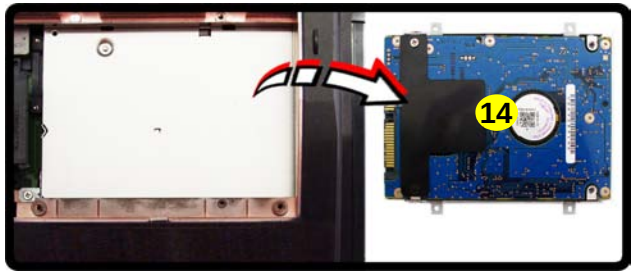


c.



b.





12. Component Bay Cover
14. Hard Disk
21. & 22.HDD Brackets
23. HDD Tab

- 17 Screws

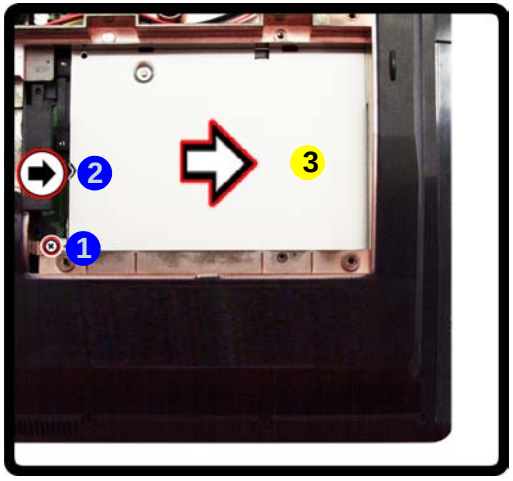
Removing the Optical (CD/DVD) Device

1. Turn **off** the computer, and remove the battery (***page 2 - 5***) and hard disk in the secondary HDD bay (***page 2 - 8***).
2. Remove the screw at point 1 (***Figure 5a***), and use a screwdriver to carefully push out the optical device 3 at point 2 (***Figure 5a/b***).
3. Insert the new device and carefully slide it into the computer (the device only fits one way. DO NOT FORCE IT; The screw holes should line up).
4. Restart the computer to allow it to automatically detect the new device.

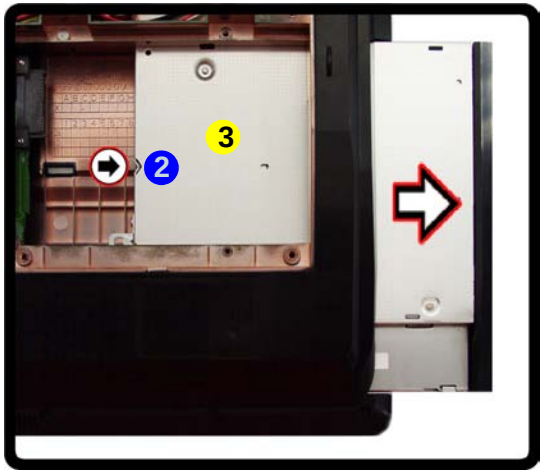
Figure 5
Optical Device Removal

a. Remove the screw.
b. Push the optical device out off the computer at point 2.

a.



b.



3. Optical Device

- 1 Screw

Removing the System Memory (RAM)

Figure 6
RAM Module Removal

a. Remove the screws.
b. Remove the cover.

The computer has two memory sockets for 204 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting **DDR3** 1333MHz. The main memory can be expanded up to 8GB. The SO-DIMM modules supported are DDRIII 1GB, 2GB and 4GB Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

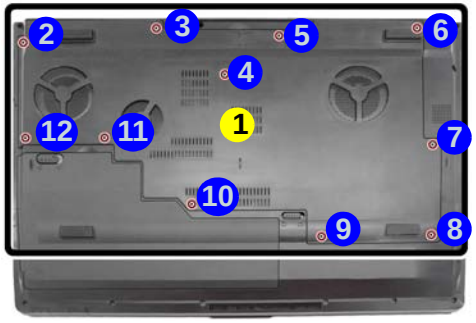
Memory Upgrade Process

1. Turn **off** the computer, remove the battery (***page 2 - 5***).
2. Locate the component bay cover 1 and remove screws 2 - 12 (***Figure 6a***).
3. Carefully remove the component bay cover 1 (***Figure 6b***).
4. The RAM is located at point 13 (***Figure 6b***).

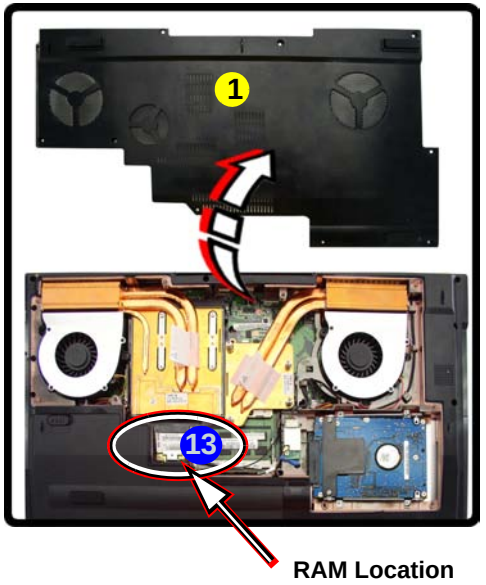
Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

a.



b.



1. Component Bay Cover

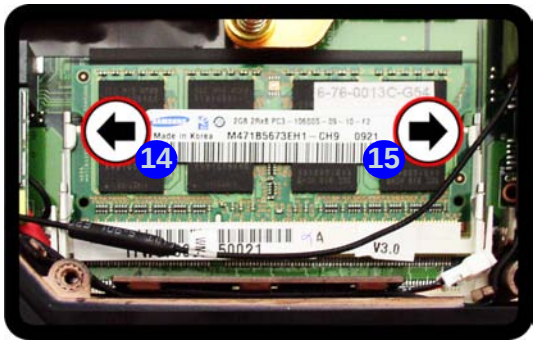
- 11 Screws

5. Gently pull the two release latches (14 & 15) on the sides of the memory socket in the direction indicated by the arrows (***Figure 7c***).

Figure 7
RAM Module Removal (cont'd.)

c. Pull the release latches.
d. Remove the module.

c.



d.

6. The RAM module 16 will pop-up (***Figure 7d***), and you can then remove it.
7. Pull the latches to release the second module if necessary.
8. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
9. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE the module; it should fit without much pressure.
10. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
11. Replace the bay cover and screws.
12. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

16. RAM Module

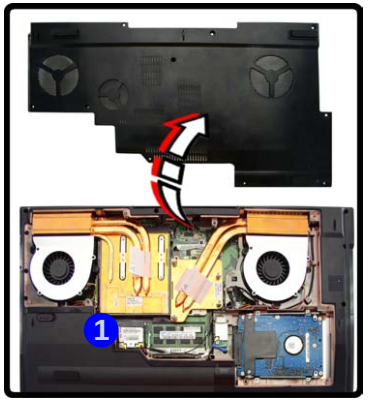
Figure 8
Wireless LAN Module Removal

a. Remove the cover.
b. Disconnect the cables and remove the screw.
c. The WLAN module will pop up.
d. Lift the WLAN module out.

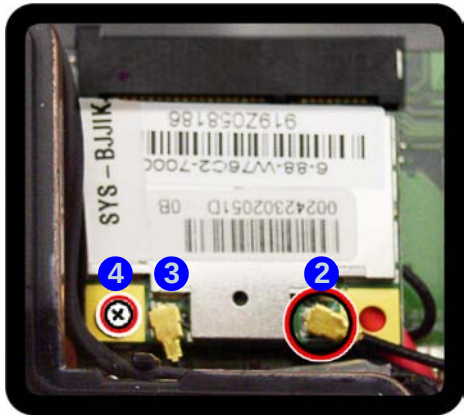
Removing the Wireless LAN Module

1. Turn **off** the computer, remove the battery (***page 2 - 5***) and the component bay cover (***page 2 - 10***).
2. The Wireless LAN module will be visible at point 1 on the mainboard (***Figure 8a***).
3. Carefully disconnect cables 2 - 3, then remove screw 4 from the module socket (***Figure 8b***).
4. The Wireless LAN module 5 will pop-up (***Figure 8c***).
5. Lift the Wireless LAN module (***Figure 8d***) up and off the computer.

a.



b.



c.

d.

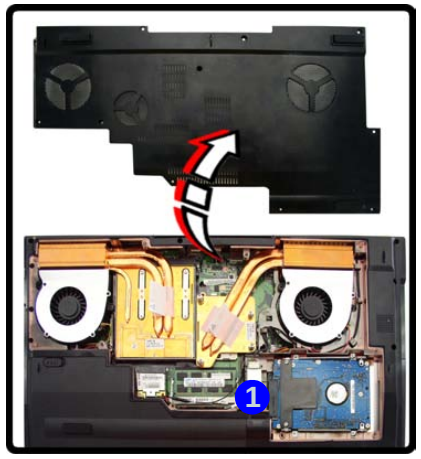
5. WLAN Module

- 1 Screw

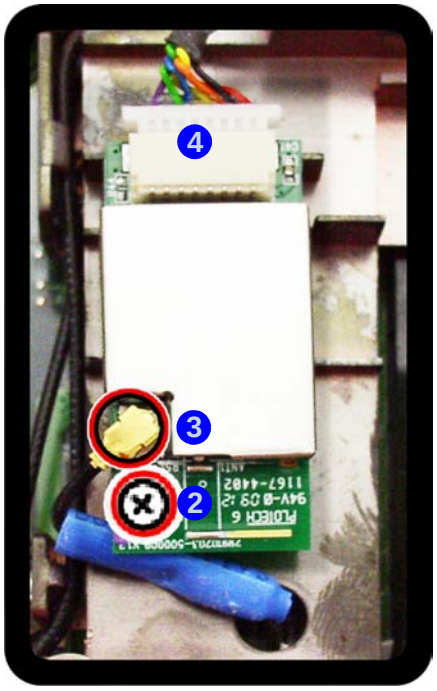
Removing the Bluetooth Module

1. Turn **off** the computer, remove the battery (*page 2 - 5*), and component bay cover (*page 2 - 10*).
2. Locate the Bluetooth module at point 1 (*Figure 9a*), and remove the screw 2 (*Figure 9b*).
3. Carefully separate the Bluetooth module from the connector 3 and disconnect the cable 4 (*Figure 9b*).
4. Lift the Bluetooth module 5 up and off the computer (*Figure 9c*).

a.



b.



c.

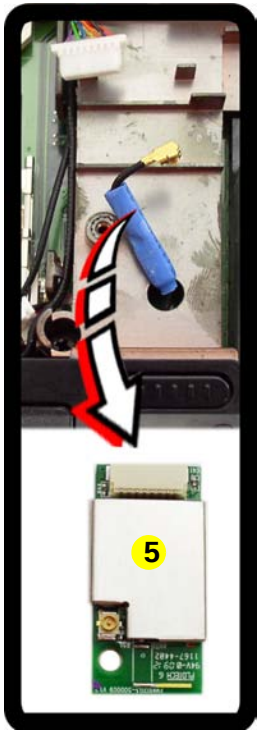


Figure 9
Bluetooth Module Removal

a. Locate the Bluetooth module.
b. Remove the screw and disconnect the cable and the connector.
c. Lift the Bluetooth module up and off the socket.

5. Bluetooth Module

- 1 Screw

Figure 10
3G Module Removal

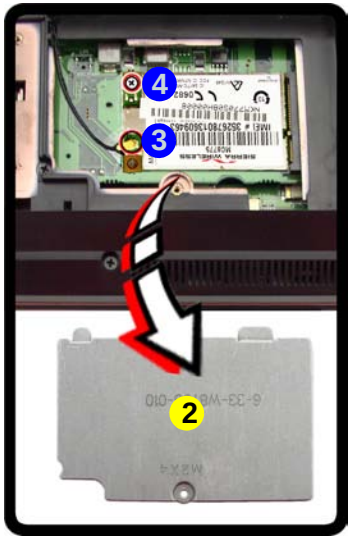
a. Remove the screw.
b. Remove the 3G module cover. Disconnect the cable and remove the screw.
c. The 3G module will pop up.
d. Lift the 3G module up and off the socket.

Removing the 3G Module

1. Turn **off** the computer, remove the battery (*page 2 - 5*).
2. Locate the 3G module cover, and remove screw 1 (*Figure 10a*).
3. Remove the 3G module cover 2 and carefully disconnect the cable 3 and remove the screw 4 from the 3G module (*Figure 10b*).
4. The 3G module 5 will pop up (*Figure 10c*).
5. Lift the 3G module 5 up and off the computer (*Figure 10d*).

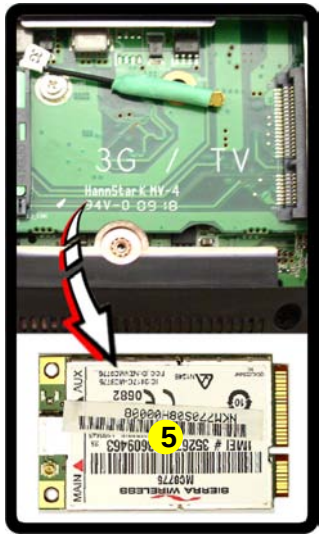
a.

b.



c.

d.



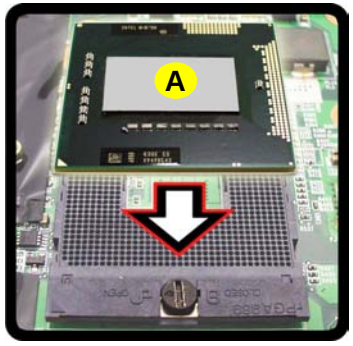
2. 3G Module Cover
5. 3G Module

- 1 Screw

CPU/Video Card Pre-Installation Procedure

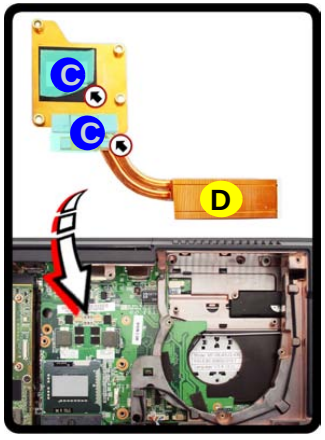
1. Turn **off** the computer, and turn it over and remove the battery (***page 2 - 5***) and component cover (***page 2 - 10***).
2. Insert the CPU A, pay careful attention to the pin alignment (***Figure 11a***), it will fit only one way (DO NOT FORCE IT!), and turn the release latch B towards the lock symbol (***Figure 11b***).
3. **Remove the stickers** C (***Figure 11c***) from the CPU heat sink unit.
4. Insert the heat sink unit D as indicated in ***Figure 11c***.
5. Tighten the CPU heat sink screws in the order 1, 2, 3 & 4 (the order as indicated on the label and ***Figure 11d***).
6. Remove the protective mylar 5 from the video card E and make sure that the 5 thermal pads are still on points 6 - 10 as indicated below (***Figure 11e***).

a.

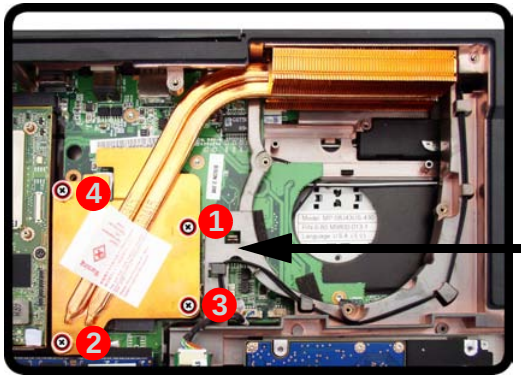


b.

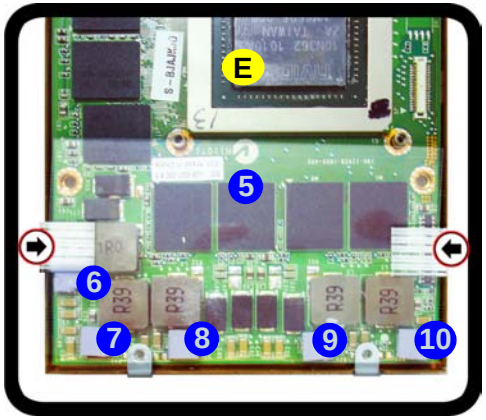
c.



d.



e.



Note:

Tighten the screws in the order 1-2-3-4 as indicated on the label.

Figure 11
CPU/Video Card Pre-Installation Procedure

a. Insert the CPU.
b. Turn the release latch towards the lock symbol.
c. Remove the stickers from the heat sink unit and insert the heat sink.
d. Tighten the screws.
e. Remove the protective mylar from the video card and make sure that the thermal pads are still on points 6 - 10.

Reminder

During delivery, the following are not yet assembled inside the computer:

Video Card & CPU Heat Sinks

VGA Card

CPU

A. CPU
D. CPU Heat Sink
E. Video Card

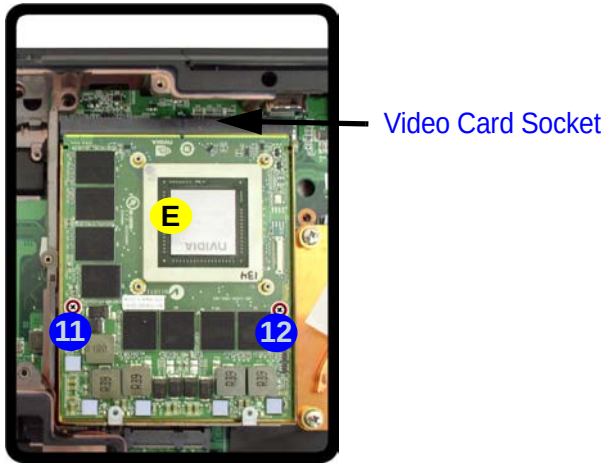
- 4 Screws

Figure 12
CPU/Video Card Pre-Installation Procedure (cont'd)

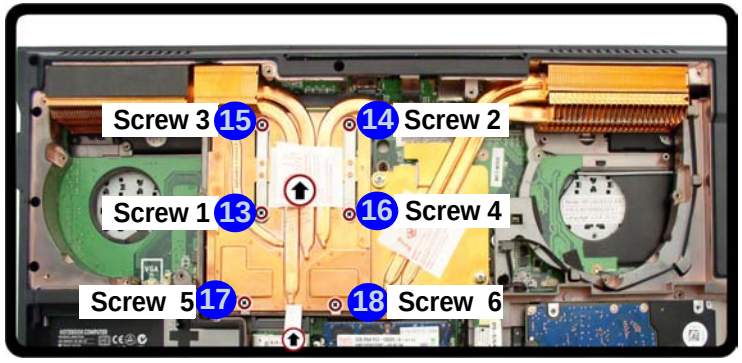
f. Insert the video card into the video card socket and tighten the screws.
g. Remove the back stickers of the thermal pad and insert the video card heat sink.
h. Tighten the screws as indicated on the label.
i. Insert the video card and CPU fans.
j. Connect the cables and tighten the screws.

7. Insert the video card E into the video card socket and tighten screws 11 & 12 (*Figure 12f*). **For more information, see** *page 2 - 19*.
8. Remove the stickers from the back of the thermal pads and insert the video card heat sink F (*Figure 12g*)
9. Tighten screws 13 - 18 as indicated on the label (*Figure 12h*).
10. Insert the video card & CPU fans G & H (*Figure 12i*).
11. Connect cables 19 & 20, and tighten screws 21 - 26 (*Figure 12j*). Replace the component bay cover (*page 2 - 10*).

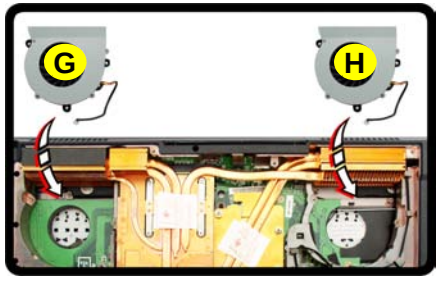
f.



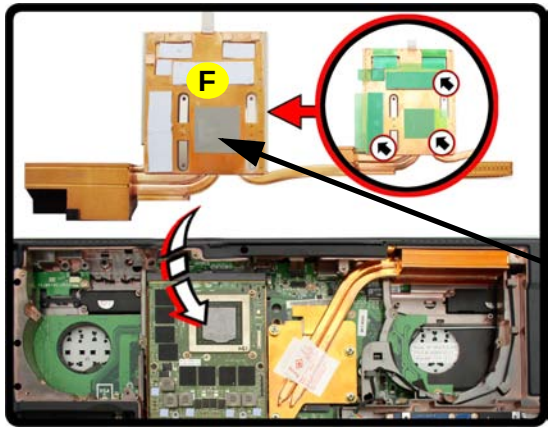
h.



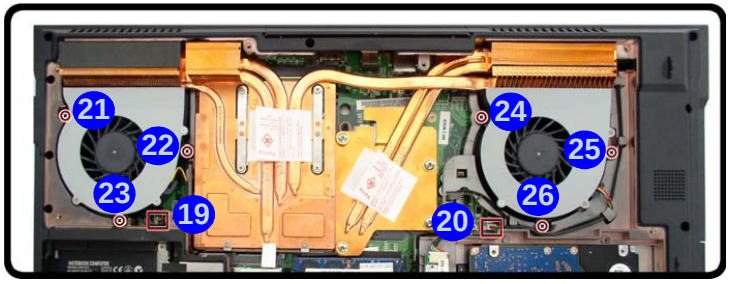
i.



g.



j.



E. Video Card
F. Video Card Heat Sink
G. Video Card Fan
H. CPU Fan

- 14 Screws

Removing and Installing the Video Card

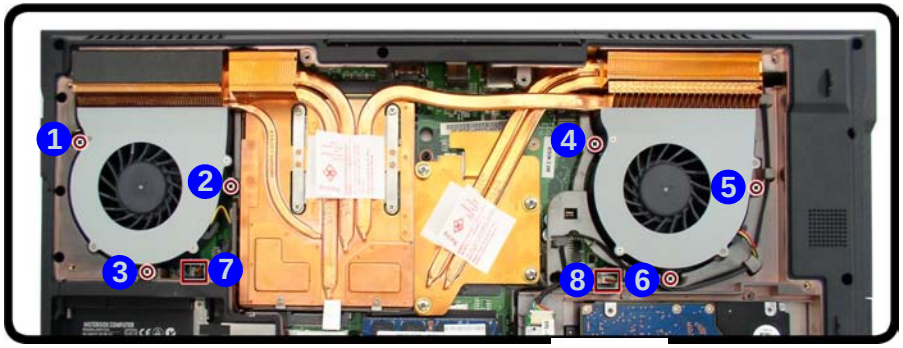
Video Card Removal Procedure

1. Turn **off** the computer, and turn it over and remove the battery (*page 2 - 5*) and component cover (*page 2 - 10*).
2. Remove screws 1 - 6 and fan cables 7 & 8 (*Figure 13a*). Remove the VGA & CPU fan units 9 & 10 (*Figure 13b*).
3. Remove screws 11 - 16 from the heat sink unit in the order indicated on the label: screw 6 first through to screw 1 last (*Figure 13c*).

Figure 13
Video Card Removal

a. Remove the fan screws and fan cables.
b. Remove the fan units.
c. Remove the heat sink screws in the reverse order as indicated on the label.

a.



Heat Sink Screw Removal and Insertion

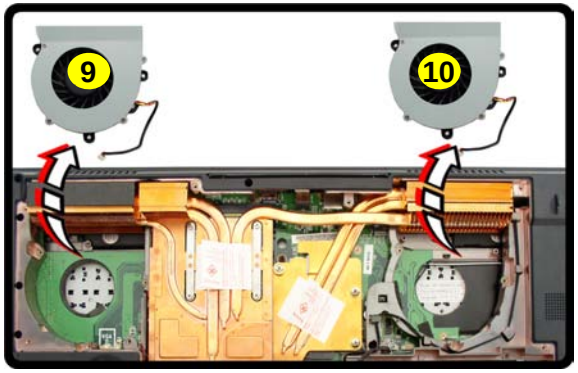
Remove the screws from the heat sink in the reverse order: **6-5-4-3-2-1** (the numbers **1 - 6** are imprinted on the heat sink itself).

When tightening the screws, make sure that they are tightened in the right order (**1 - 6**).

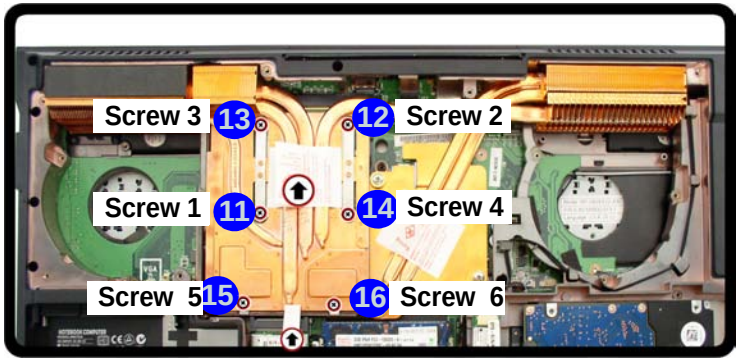
Caution

The heat sink, and video card area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.

b.



c.



9. VGA Fan Unit
10. CPU Fan Unit

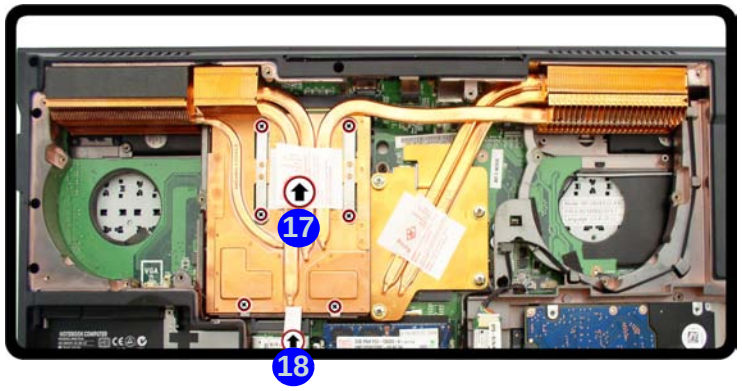
- 12 Screws

Figure 14
Video Card Removal (cont'd)

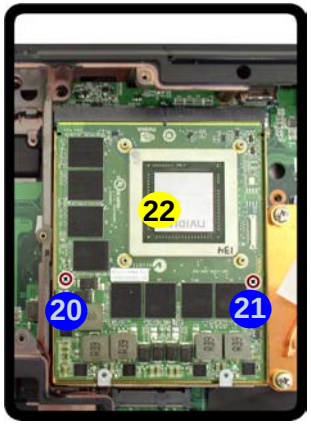
d. Carefully pull the labels up in the direction of the arrows.
e. Lift up the heat sink.
f. Remove the video card screws.
g. Remove the video card.

4. Carefully pull the labels 17 & 18 up in the direction of the arrows (***Figure 14d***) and lift up the heat sink 19 (***Figure 14e***).
5. Remove screws 20 & 21 from the video card 22 (***Figure 14f***).
6. Remove the video card 22 (***Figure 14g***).

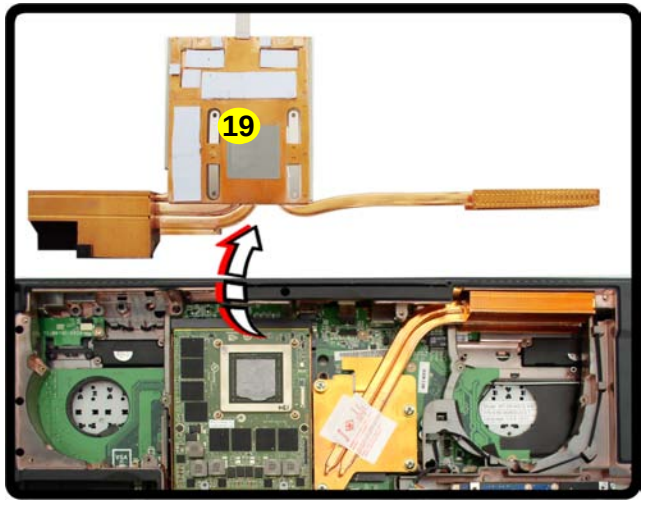
d.



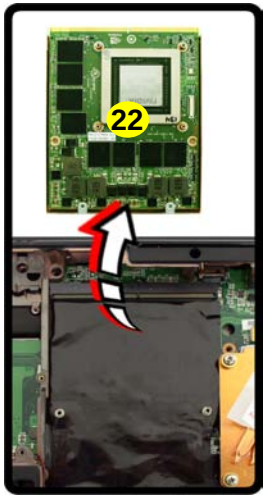
f.



e.



g.



19. Heat Sink
22. Video Card

- 2 Screws

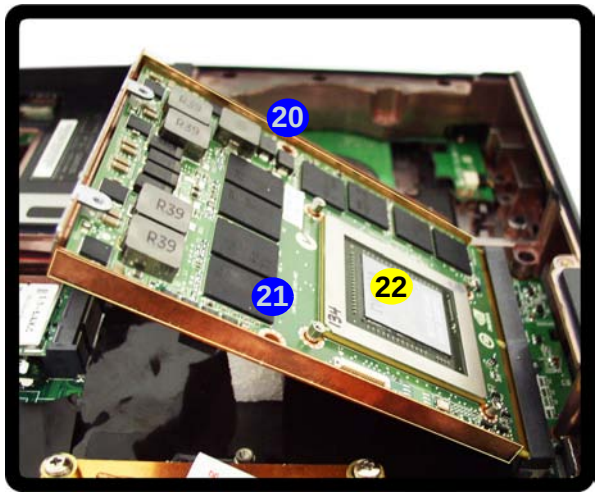
Video Card Installation Procedure

1. Prepare to fit the video card 22 into the slot by holding it at about a 30° angle (***Figure 15h***).
2. The card needs to be inserted fully into the slot, and the video card and socket have a guide-key and pin which align to allow the card to fit securely (***Figure 15h***).
3. Fit the connectors firmly into the socket, straight and evenly.

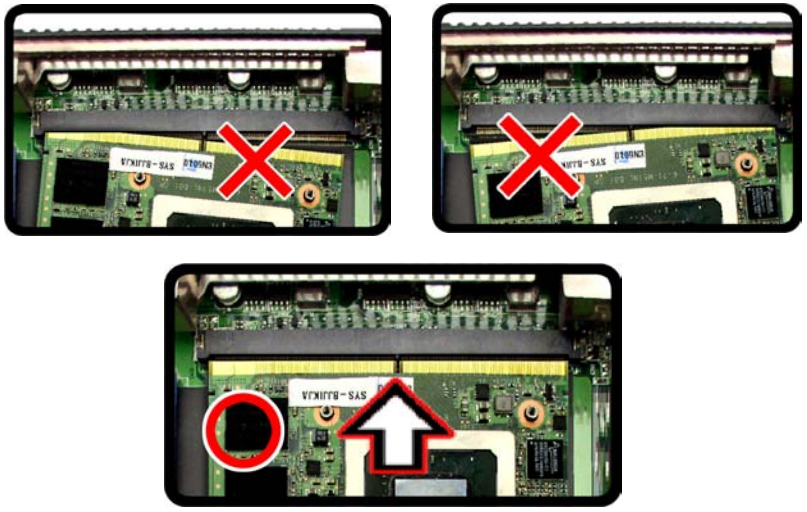
Figure 15
Installing a Video Card

h. Insert the video card at a 30 degree angle.
i. Fit the connectors straight and even.

h.



i.



4. DO NOT attempt to push one end of the card in ahead of the other.
5. The card's pin alignment will allow it to only fit one way. **Make sure the module is seated as far into the socket as it will go** (none of the gold colored contact should be showing). DO NOT FORCE the card; it should fit without much pressure.
6. Secure the card with screws 20 & 21 (***Figure 15h***).
7. Place the heatsink back on the card, and secure the screws in the order indicated in ***Figure 13 on page 2 - 17***.
8. Attach the video card fan and secure with the screws as indicated in ***Figure 13 on page 2 - 17***.
9. Reinsert the component bay cover, and secure with the screws as indicated in ***Figure 6 on page 2 - 10***.

22. Video Card

- 2 Screws

Removing and Installing the Processor

Processor Removal Procedure

1. Turn **off** the computer, remove the battery (*page 2 - 5*), component bay cover (*page 2 - 10*), fans (*page 2 - 17*) and video card heatsink (*page 2 - 17*).
2. Remove screws 1 - 4 from the heat sink unit in the order indicated on the label (i.e screw 4 first through to screw 1 last) (*Figure 16a*).
3. Carefully (it may be hot) remove the heat sink unit 5 by pulling the label up (*Figure 16b*).)

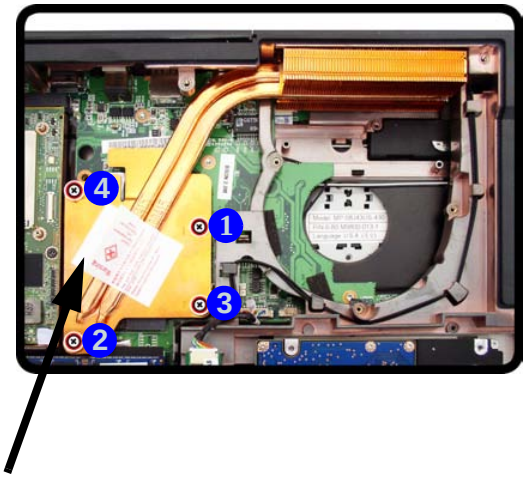
Figure 16
Processor Removal Procedure

a. Remove the screws in the reverse order.
b. Carefully remove the heat sink unit by pulling the label up.

CPU Warning

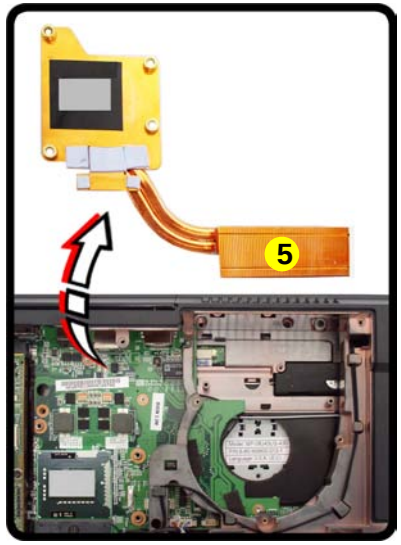
In order to prevent damaging the contact pins when removing the CPU, it is necessary to first remove the WLAN module from the computer.

a.



Note: Loosen the screws in the reverse order 4-3-2-1 as indicated on the label.

b.



5. Heat Sink Unit

- 4 Screws

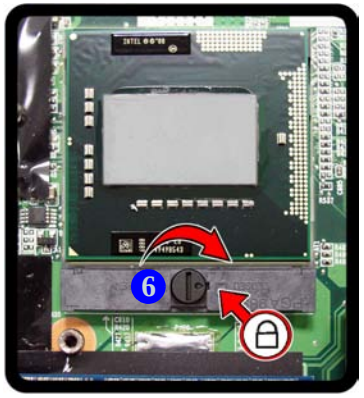
4. Turn the release latch 6 towards the unlock symbol, to release the CPU (***Figure 17c***).
5. Carefully (it may be hot) lift the CPU 7 up out of the socket (***Figure 17d***).
6. See ***page 2 - 22*** for information on inserting a new CPU.
7. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!).

Figure 17
Processor Removal (cont'd)

c. Turn the release latch to unlock the CPU.
d. Lift the CPU out of the socket.

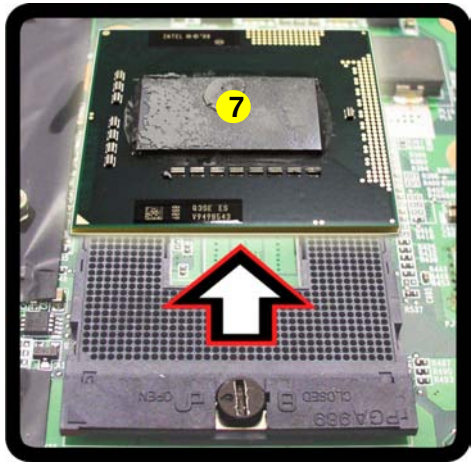
c.

Unlock



Lock

d.



Caution

The heat sink, and CPU area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.

7. CPU

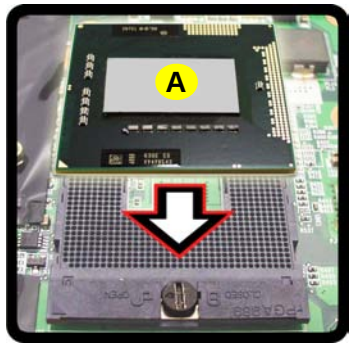
Figure 18
Processor Installation

a. Insert the CPU.
b. Turn the release latch towards the lock symbol.
c. Remove the sticker from the heat sink unit and insert the heat sink.
d. Tighten the screws.

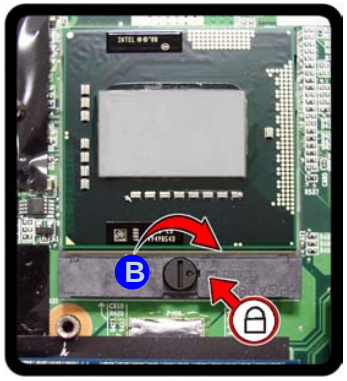
Processor Installation Procedure

1. Insert the CPU (A), pay careful attention to the pin alignment (***Figure 18a***), it will fit only one way (DO NOT FORCE IT!), and turn the release latch (B) towards the lock symbol (***Figure 18b***).
2. **Remove the sticker** (C) (***Figure 18c***) from the heat sink unit.
3. Insert the heat sink unit (D) as indicated in ***Figure 18c***.
4. Tighten the CPU heat sink screws in the order (1), (2), (3) & (4) (the order as indicated on the label and ***Figure 18d***).
5. Replace the CPU fan, component bay cover and tighten the screws (***page 2 - 17***).

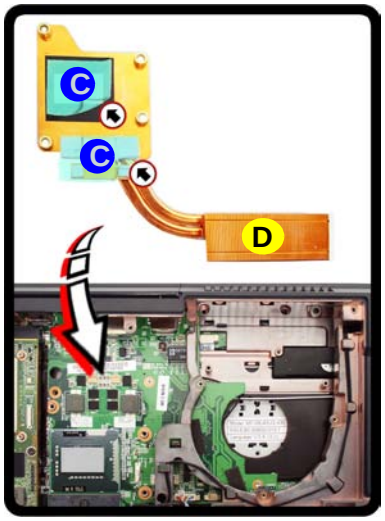
a.



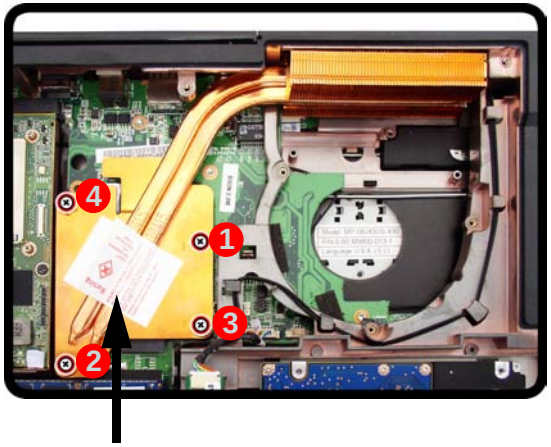
b.



c.



d.



Note:

Tighten the screws in the order 1-2-3-4 as indicated on the label.

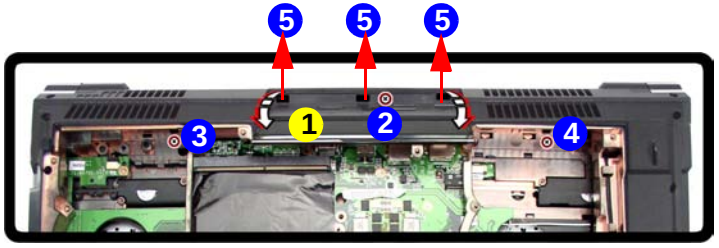
A. CPU
D. Heat Sink

- 4 Screws

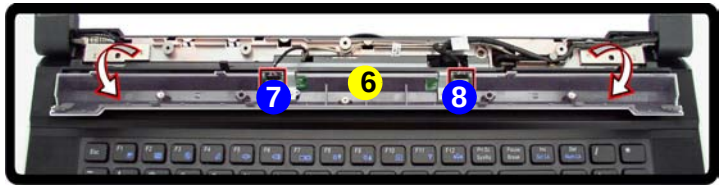
Keyboard Removal

1. Turn **off** the computer, remove the battery (*page 2 - 5*), remove the component bay cover (*page 2 - 10*), VGA & CPU fans (*page 2 - 17*), video card heatsink (*page 2 - 17*) and CPU heat sink (*page 2 - 20*).
2. Open the rear cover 1, remove the screws 2 - 4 and press at point 5 to unsnap the the hinge cover module (*Figure 19a*).
3. Turn the computer over, open the Lid/LCD and lift the hinge cover module 6 and disconnect the cables 7 & 8 (*Figure 19b*).
4. Turn the computer over again, press at point 9 (*Figure 19c*) to unsnap the LED cover module 10 (you may need to use a small screwdriver to do this).
5. Turn the computer over, open the Lid/LCD and carefully lift the LED cover module 10 and disconnect the cable 11 (*Figure 19d*)

a.



b.



c.

d.

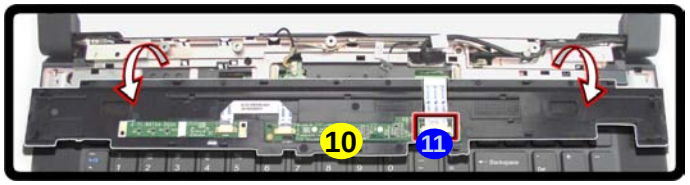


Figure 19
Keyboard Removal

a. Open the rear cover, remove the screws and press at point 5 to unsnap the hinge cover module.
b. Lift the hinge cover module and disconnect the cables.
c. Press at point 9 to unsnap the LED cover module.
d. Lift the LED cover module and disconnect the cable.

1. Rear Cover
6. Hinge Cover Module
10. LED Cover Module

- 3 Screws

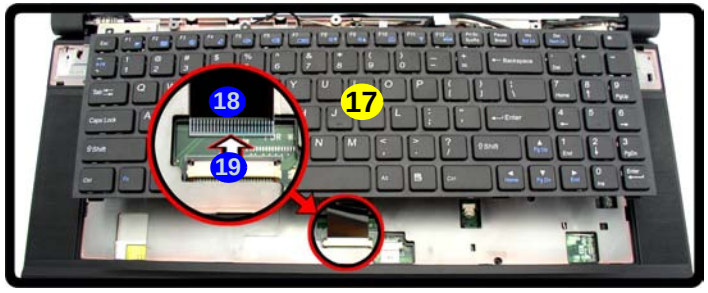
Figure 20
Keyboard Removal (cont'd)

e. Remove the screws.
f. Carefully lift the keyboard up. Disconnect the cable from the locking collar.
g. Remove the keyboard.

6. Remove screws 12 - 16 from the keyboard (***Figure 20e***).
7. Carefully lift the keyboard 17 up, being careful not to bend the keyboard ribbon cable (***Figure 20f***).
8. Disconnect the keyboard ribbon cable 18 from the locking collar socket 19 (***Figure 20f***). Remove the keyboard 17 (***Figure 20g***).

e.

f.



g.

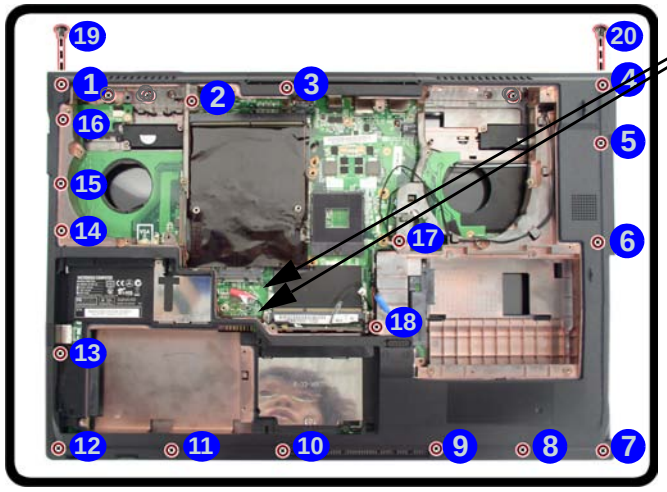
17. Keyboard

- 5 Screws

Removing the Modem

1. Turn **off** the computer, remove the battery (***page 2 - 5***), HDD (***page 2 - 6***), component bay cover (***page 2 - 10***), optical device (***page 2 - 9***), bluetooth (***page 2 - 13***), CPU (***page 2 - 20***) and keyboard (***page 2 - 23***).
2. Remove screws 1 - 18 from the bottom case (***Figure 21a***).
3. Remove screws 19- 20 from the rear of the computer and loosen the WLAN cables (***Figure 21a***).
4. Turn the computer over, remove screws 21 - 25 and disconnect cables 26 - 33 from the top case (***Figure 21b***).
5. Lift the top case 34 up and off the bottom case. The modem module will be visible at point 35 (***Figure 21c***).
6. Remove screws 36 - 37 and disconnect cable 38 (***Figure 21c***). Lift the modem module 39 up (***Figure 21d***).

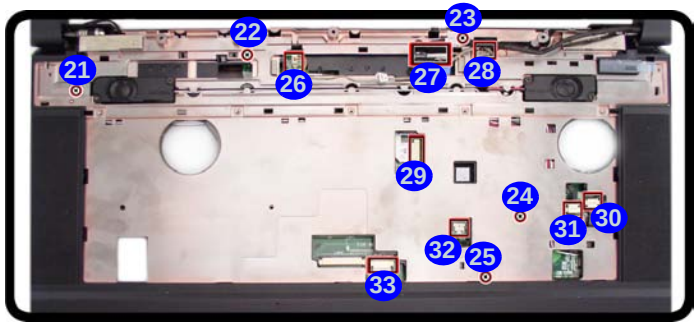
a.



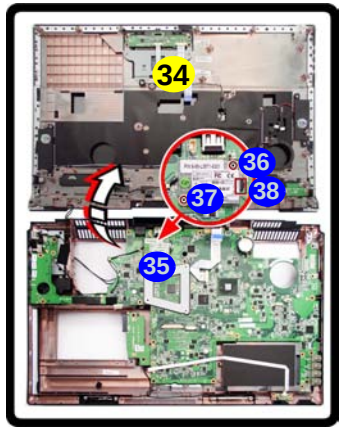
Note:

Loosen the two WLAN cables at the back of the top case all the way up.

b.



c.



d.

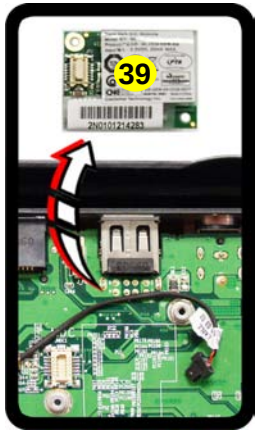


Figure 21
Modem Removal

a. Remove the screws from the bottom case and rear of the computer. Loosen the WLAN cables.
b. Turn the computer over, remove the screws and disconnect the cables from the top case.
c. Lift the top case up and off the computer. Remove the modem screws and disconnect cable.
d. Lift the modem module up.

34. Top Case
39. Modem Module

- 27 Screws

Appendix A: Part Lists

This appendix breaks down the ***W880CU*** series notebook's construction into a series of illustrations. The component part numbers are indicated in the tables opposite the drawings.

Note: This section indicates the *manufacturer's* part numbers. Your organization may use a different system, so be sure to cross-check any relevant documentation.

Note: Some assemblies may have parts in common (especially screws). However, the part lists DO NOT indicate the total number of duplicated parts used.

Note: Be sure to check any update notices. The parts shown in these illustrations are appropriate for the system at the time of publication. Over the product life, some parts may be improved or re-configured, resulting in *new* part numbers.

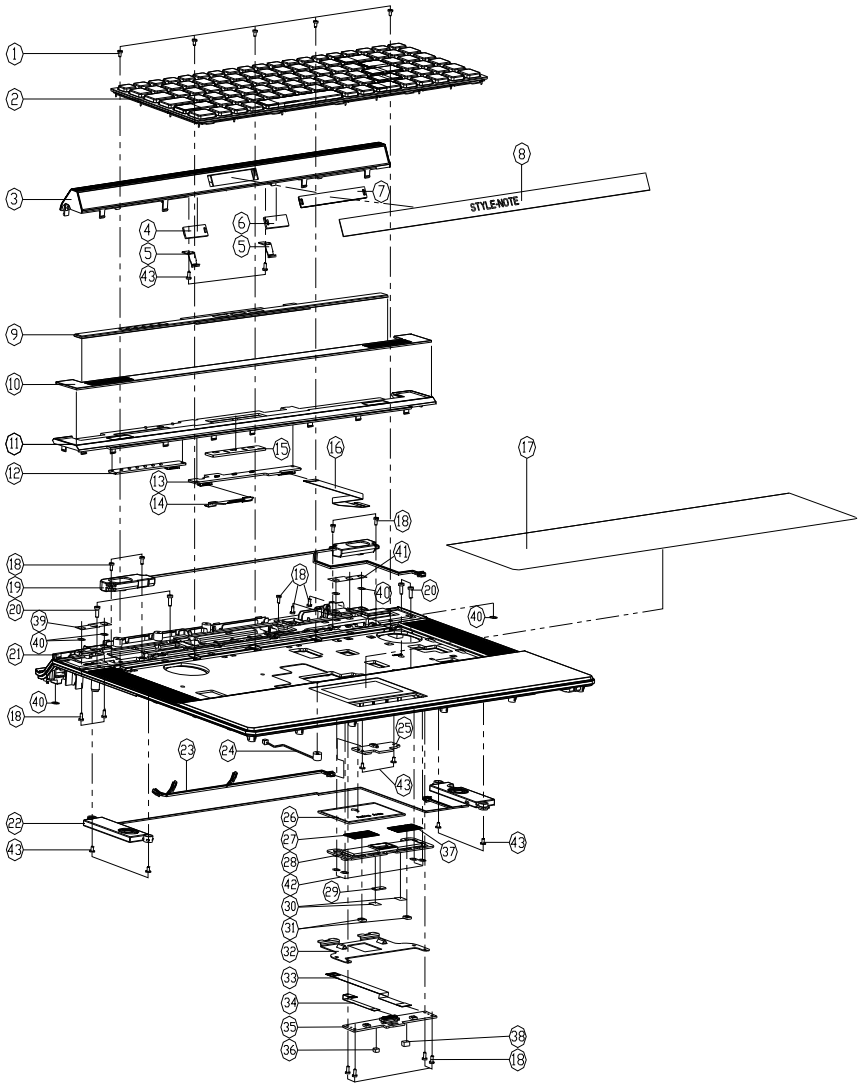
Part List Illustration Location

The following table indicates where to find the appropriate part list illustration.

Table A- 1
Part List Illustration Location

Parts	W880CU
Top with Fingerprint	*page A - 3*
Top without Fingerprint	*page A - 4*
Bottom	*page A - 5*
LCD	*page A - 6*
2nd HDD	*page A - 7*
COMBO	*page A - 8*
DVD-Dual Drive	*page A - 9*

Top with Fingerprint



ITEM	PART NAME	PART NO	REMARK
1	小屏螺絲SCREW M2*3L K1 NI ICT GTY-PATCH	6-35-B1120-3RE	
2	K/B USA 黑色3L FRAME (US) MODULE M980NU/W870CU	6-79-M980NU0K-010	
3	HINGE COVER (上蓋前止擋墊) MODULE W870CU	6-42-W8702-302	
4	RIGHT-LOGO BOARD V3.0 W870CU	6-77-W8703-D03	
5	LOGO BOARD BRACKET SECC W870CU	6-33-W870S-010	
6	LEFT-LOGO BOARD V3.0 W870CU	6-77-W8705-D03	
7	LOGO LIGHT GUIDE PLATE導光PC W870CU	6-42-W8702-0C1	
8	LOGO PLATE (STYLE-NOTE) ACRYLIC+SM9888 W870CU	6-40-W8702-080	
8	LOGO PLATE (無毛刷) MYLAR+9448B W870CU	6-40-W8702-080-W	
9	TOP COVER ACRYLIC W870CU	6-42-W8702-011	
10	TOP COVER SUS430 W870CU	6-33-W8702-041	
11	TOP COVER MODULE W870CU	6-42-W8702-101	
12	LED BOARD V2.0A W870CU	6-77-W8704-D02A	
13	TOUCH SENSOR BOARD V3.0 W870CU	6-77-W870G-D03	
14	FFC CABLE FOR LENS BOARD 15PIN W870CU	6-43-W8700-041	
15	HOT KEY LENS ACRYLIC W870CU	6-42-W8702-070	
16	FFC CABLE 26PIN FOR HOTKEY W870CU	6-43-W8707-011	
17	TOP CASE PROTECT MYLAR(PET+3M8915) W870CU	6-40-W8702-061	
18	SCREW M2*4L K1 BZ ICT NY-	6-35-B6120-4RA	
19	SPK+ CABLE 28416 2W 4 Ω(P2065VK604-3) VECO W870CU	6-23-5W870-021	
20	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
21	TOP CASE MODULE W870CU	6-39-W8702-011	
22	SPK+ CABLE 18 2W 4 Ω(P1BCUSAHLF-A) VECO W870CU	6-23-5W870-011	
23	CABLE FOR POWER BUTTON BOARD 3P AWG28 L=240MM W870CU	6-43-W8700-011	
24	MIC 6.0*0.2 1.0V~10V 22K? W/CABLE BM6035	6-23-EW870-010	
25	POWER BUTTON BOARD V2.0A W870CU	6-77-W870C-D02A	
26	TOUCH PAD TPA2U2VA99RM2 W840T	6-49-W84T2-010	
27	FINGER BUTTON SUS304 L W870CU	6-33-W8702-031	
28	CLICK BUTTON FINGERPRINT CM6140 701DE W870CU	6-42-W8702-081	
29	RUBBER (D3*5*2) W45XL13XH2+SONY G9000 W870CU	6-47-W8702-040	
30	CLICK BUTTON MYLAR W870CU	6-40-W8702-090	
31	PORON FOR CLICK BUTTON W765S	6-47-W7652-010	
32	TP BRACKET SECC W870CU	6-33-W8702-011	
33	FFC CABLE FOR CLICK BOARD 10PIN W870CU	6-43-W8700-021	
34	FFC CABLE FOR CLICK BOARD 10 1/P EP P1.0H-85 L=5.3CM W86470	6-43-M8600-030	
35	CLICK BOARD(2BUTTON)FINGERPRINTER BOARD(FD BOARD)ASSY W86CU/W870CU	6-77-W870A-N03	
36	RUBBER (8*5.1*5) W5XL8XH5.1+SONY G9000 W870CU	6-47-W8702-030	
37	FINGER BUTTON SUS304 R W870CU	6-33-W8702-021	
38	RUBBER 8.5*4.5*15 +SONY G9000 W870CU	6-47-W8702-020	
39	MYLAR PC FOR HINGE L SIDE FOR W870CU	6-40-W8701-070	
40	WASHER (ø5*ø2.5*0.7T) W870CU	6-37-02000-506	
41	MYLAR PC FOR HINGE R SIDE W870CU	6-40-W8701-060	
42	WASHER6*ø3*0.3T 黑色MYLAR 橡膠墊片符合法規要求	6-37-02000-608	
43	SCREW M2*3L K1 NI ICT NY	6-35-B1120-3RA	

Figure A - 1
Top with Fingerprint

Top without Fingerprint

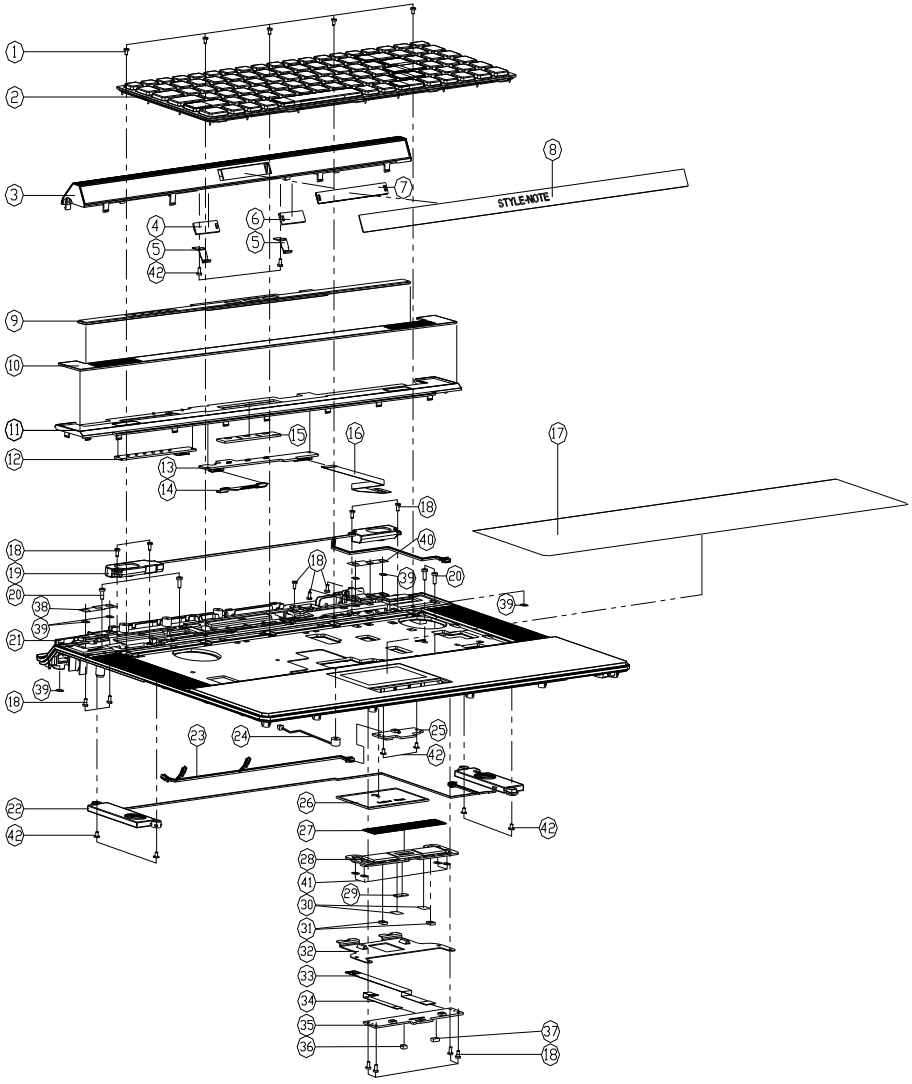
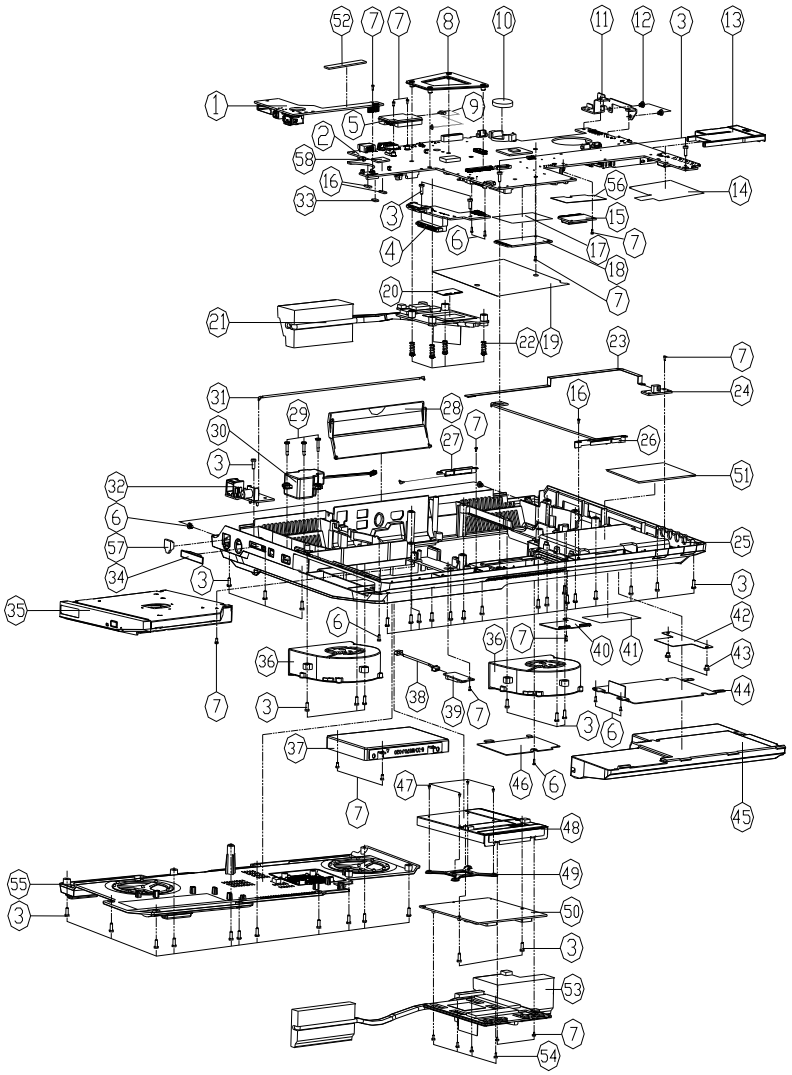


Figure A - 2
Top without Fingerprint

ITEM	PART NAME	PART NO	REMARK
1	(非標準)SCREW M2*3L K1 NI ICT GTY-PATCH	6-35-B1120-3RE	
2	K/B USA(黑色)& FRAME (US) MODULE M980NU/W870CU	6-79-M980NU0K-010	
3	HINGE COVER MODULE W870CU	6-42-W8702-301	
4	RIGHT-LOGO BOARD V3.0 W870CU	6-77-W8703-D03	
5	LOGO BOARD BRACKET SECC W870CU	6-33-W870S-010	
6	LEFT-LOGO BOARD V2.0A W870CU	6-77-W8705-D02A	
7	LOGO LIGHT GUIDE PLATE 導光PC W870CU	6-42-W8702-0C1	
8	LOGO PLATE (STYLE-NOTE) ACRYLIC+3M9888 W870CU	6-40-W8702-080	
8	LOGO PLATE(無NFC刷卡)MYLAR+9448B W870CU	6-40-W8702-080-W	
9	TOP COVER ACRYLIC W870CU	6-42-W8702-011	
10	TOP COVER SUS430 W870CU	6-33-W8702-041	
11	TOP COVER MODULE W870CU	6-42-W8702-101	
12	LED BOARD V2.0A W870CU	6-77-W8704-D02A	
13	TOUCH SENSOR BOARD V3.0 W870CU	6-77-W870G-D03	
14	FFC CABLE FOR LENS BOARD 15PIN W870CU	6-43-W8700-041	
15	HOT KEY LENS ACRYLIC W870CU	6-42-W8702-070	
16	FFC CABLE 26PIN FOR HOTKEY W870CU	6-43-W8707-011	
17	TOP CASE PROTECT MYLAR(PET+3M9915) W870CU	6-40-W8702-061	
18	SCREW M2*4L K1 BZ ICT NY-	6-35-B6120-4RA	
19	SPK CABLE 20#16 2V 4Ω (P2026)(WG04-3) VCCD W870CU	6-23-5W870-021	
20	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
21	TOP CASE MODULE W870CU	6-39-W8702-011	
22	SPK CABLE 18 2V 4 Ω (P18CGDALF-A) VCCD W870CU	6-23-5W870-011	
23	CABLE FOR POWER BUTTON BOARD 3P AWG30 L=267MM W870CU	6-43-W8700-011	
24	MIC 6.0*0.2 1.0V~1.0V 2.2K? W/CABLE BM6035	6-23-EW870-010	
25	POWER BUTTON BOARD V2.0A W870CU	6-77-W870C-D02A	
26	TOUCH PAD TPA2U2VA99RM2 W840T	6-49-W84T2-010	
27	CLICK BUTTON SUS304 W870CU	6-33-W8702-051	
28	CLICK BUTTON W/O FINGERPRINT CM6140 7010E W870CU	6-42-W8702-0D1	
29	RUBBER (D=4.5*2) W4.5XL13XH2+SONY G9000 W870CU	6-47-W8702-040	
30	CLICK BUTTON MYLAR W870CU	6-40-W8702-090	
31	PORON FOR CLICK BUTTON W765S	6-47-W7652-010	
32	TP BRACKET SECC W870CU	6-33-W8702-011	
33	FFC CABLE FOR CLICK BOARD 10PIN W870CU	6-43-W8700-021	
34	FFC CABLE FOR CLICK BOARD 10 P/P 0.5P PITCH=15 L=54.0MM W860TU	6-43-M8600-030	
35	CLICK BOARD V3.0 W860CU	6-77-W8602-D03	
36	RUBBER (8*5.1*5) W5XL8XH5.1+SONY G9000 W870CU	6-47-W8702-030	
37	RUBBER 8.5*4.5*15 +SONY G9000 W870CU	6-47-W8702-020	
38	MYLAR PC FOR HINGE L SIDE FOR W870CU	6-40-W8701-070	
39	WASHER (Ø?5*Ø2.5*0.7T) W870CU	6-37-02000-506	
40	MYLAR PC FOR HINGE R SIDE W870CU	6-40-W8701-060	
41	WASHER06*03*0.3T 黑色(MYLAR 背膠)符合安規要求	6-37-02000-608	
42	SCREW M2*3L K1 NI ICT NY	6-35-B1120-3RA	

Bottom



ITEM	PART NAME	PART NO	REMARK
1	MULTI I/O BOARD V2.0A W870CU	6-77-W8701-D02A	
2	MAIN BOARD V5.0XUSB30 W/O TPM W870CU	6-77-W8700-D05-3	
3	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
4	SATA HDD & ODD BOARD V2.0 W870CU	6-77-W870N-D02	
5	[illegible]	6-88-L39TI-5301	(OPTION)
5	[illegible]	6-88-M76S1-8111	(OPTION)
6	SCREW M2*4L K1 BZ ICT NY	6-35-86120-4RA	
7	SCREW M2*3L K1 NI ICT NY	6-35-81120-3RA	
8	CPU SUPPORTER W880CU [illegible]	6-33-W860S-101	
9	MODEM CABLE L=330MM W870CU	6-43-W870U-010	
10	BATTERY 3V 210MA CR2032 (MITSUBISHI)	6-23-62015-607	
11	DVI BRACKET(SUS 430 1.0T) W870CU	6-33-W870S-021	
12	SCREW 4-40*5L K NI ACT NY	6-35-81304-5R0	
13	DUMMY NEW CARD PC+ABS TN120R	6-42-T12R3-011	
14	NEW CARD MYLAR X30 FOR M/B TN120R	6-40-T12RS-010	
15	WLAN 802.11A+G+N INTEL SHIRLEY PEAK QWFT	6-88-M7352-4200	(OPTION)
15	WLAN 802.11BGN RTL8191SE [illegible]	6-88-W76C2-7001	(OPTION)
16	PORON (20*8*3T,SM55) FOR MB W860CU	6-47-W860S-060	
17	MYLAR 64X38X0.3MM(BLACK)ODD SOCKET POSITION	6-40-M66NS-040	
18	HYBRID TV TUNER YUAN S/W MC770A MCE MINI-C	6-88-D90F7-6501	(OPTION)
19	VGA MYLAR(BLACK) [illegible]	6-40-W860S-011	
20	THERMAL PACK [illegible]	6-48-W76C3-010	
21	CPU HEATSINK THERMAL MODULE FOR W880CU	6-31-W880N-101	(OPTION)
22	[illegible]	6-35-41125-9R5	
23	FFC CABLE FOR IR BOARD PITCH=1.0MM 4PIN L=250MM W870CU	6-43-W8700-030	
24	CIR BOARD V2.0 W870CU	6-77-W870H-D02	
25	BOTTOM CASE MODULE FOR W870CU	6-39-W8703-011	
26	ANTENNA WLAN 2.4G/33G/5G PIFA WHO KNOW [illegible] W870CU	6-23-7W870-060	
27	ANTENNA BLUETOOTH 2.4G/5G PIFA BT 2DBM [illegible] W870CU	6-23-7W870-040	
28	USB DOOR(SABIS CM6140 701D)W870CU	6-42-W8703-011	
29	[illegible]SCREW FOR SPEAKER M2 D700T	6-35-Z0Z20-000	
30	SUBWOOFER 20HM 2W 87.6*G-2085CM L=45MM W870CU	6-23-5W870-030	
31	COMAN CABLE 1.27MM BLACK L=450MM FOR TV TUNER W870CU [illegible]	6-43-W870T-010	
32	RJ11 & TV BOARD V3.0 W870CU	6-77-W8706-D03	
33	RUBBER(7*7*2T) FOR M/B W860CU	6-47-W860S-030	
34	RUBBER(ARS REAR)(SILICON)(H=68.8 [illegible] W860S	6-47-M76S8-010	
35	SATA DVD SUPER MULTI ASSY (OPTION) W870CU	6-79-W870CU0Q-000	(OPTION)
35	SATA DVD SUPER MULTI (OPTION) W870CU	6-79-W880CU0Q-010	(OPTION)
35	SATA BLU-RAY COMBO ASSY (OPTION) W870CU	6-79-W870CU0W-000	(OPTION)
36	FAN MODULE FOR W870CU	6-31-W870S-200	
37	W/O 2ND HDD ASSY W870CU	6-79-W870CU0J-020	
38	BLUETOOTH CABLE 8P AWG30 L=45MM [illegible] W870CU	6-43-W870B-011	
39	BLUETOOTH KEY [illegible]	6-88-M77C5-5300	(OPTION)
39	[illegible]	6-88-M73T5-3901	(OPTION)
40	TURBO MEMORY COVER FOR EMI W860CU [illegible]	6-33-W8601-031	
41	PRODUCT LABEL FOR W880CU	6-45-W880CU03-010	
42	HDD1 PULL MYLAR(MYLAR 0.125T) W870CU	6-40-W870J-010	
43	SCREW M3*2.5L K1 NI ICT NY -	6-35-B1130-2R5	
44	HDD BRACKET MODULE W870CU	6-33-W870J-101	
45	[illegible]	6-87-W870S-421A	
46	3G METAL COVER(SUS430) W870CU	6-33-W870G-011	
47	SCREW M1.6*2L D=3.2 T=0.4 K1 BZ ICT NY	6-35-B2116-2R0	
48	NOTE GTX 100W VGA BOX CU W880CU	6-33-W880L-010	
49	VGA SUPPORTER SUS430 W860CU	6-33-W860S-030	
50	[illegible]	6-88-D90FV-7820	
50	[illegible]	6-88-D90FV-7821	
51	PORON(100*60*1.25T) FOR BOTTOM CASE W860CU	6-47-W8603-020	
52	PORON H48 (40*10*0.5T) FOR MB W860CU	6-47-W860S-050	
53	VGA HEATSINK MODULE (NOTE GTX 100W)FOR W880CU	6-31-W880N-201	
54	SCREW M1.6*3.5L K(T=1.2 D=4.5) BZ ICT NY	6-35-82116-3R5	
55	CPU COVER MODULE FOR W880CU	6-42-W880S-100	
56	3G CARD MYLAR BLACK (金卡尺寸)贴于 M/B W860CU	6-40-W860S-050	
57	RUBBER FOR MODEM JACK W/O MODEM W720S	6-47-M72SU-010	FOR W/O MODEM
58	RUBBER (5*10*2.5)[illegible] M/B W860CU	6-47-W860S-040	

Figure A - 3
Bottom

LCD

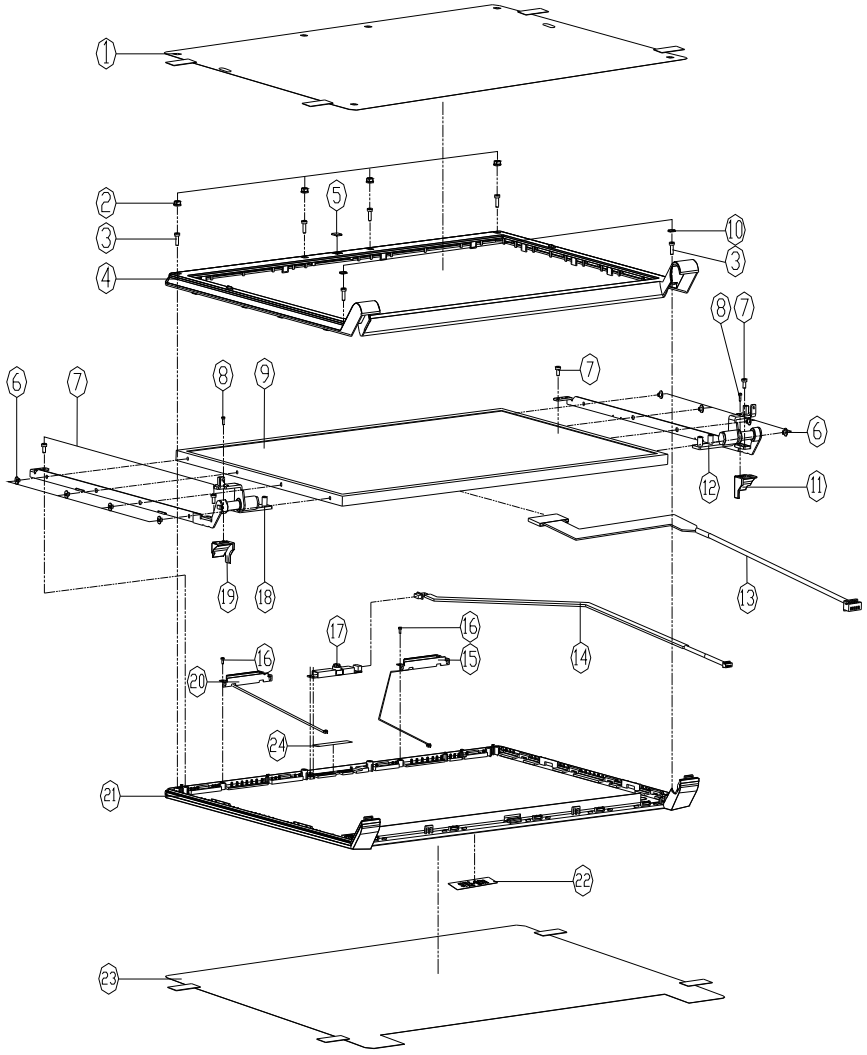
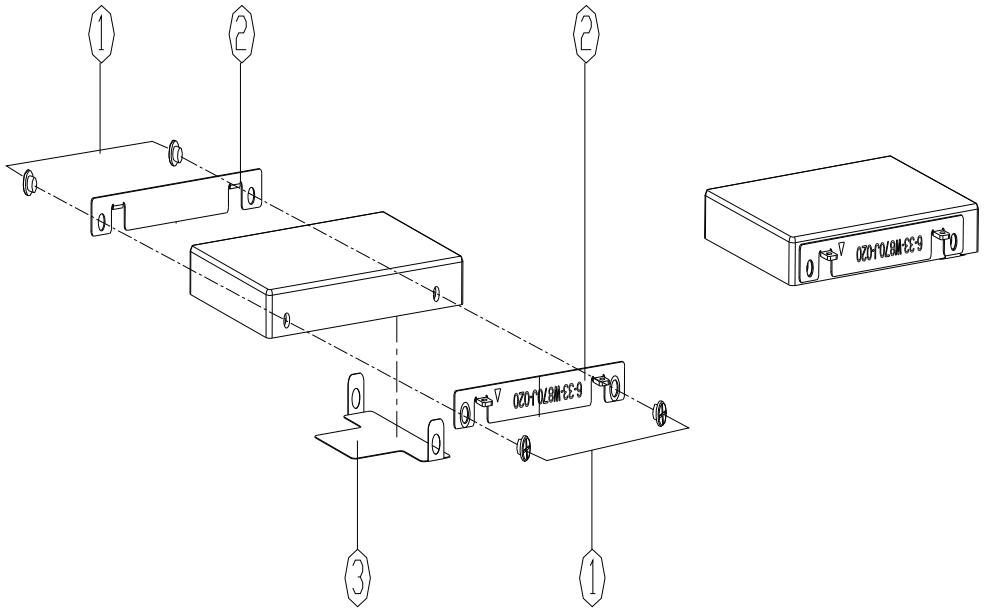


Figure A - 4
LCD

ITEM	PART NAME	PART NO	REMARK
1	FRONT CASE MYLAR FOR W870CU 無鹵	6-40-W8701-020	
2	RUBBER (5*5*2.35) SILICON FRONT W870CU 無鹵	6-47-W8701-010	
3	SCREW M2.5*6L K BZ ICT NY 無鹵	6-35-82125-6RA	
4	LCD FRONT COVER MODULE W870CU 無鹵	6-39-W8701-012	
5	CCD-LENS 壓鑄 FOR W870CU 無鹵	6-42-W870T-011	W/ CCD
5	W/O CCD LENS 壓鑄 FOR W870CU 無鹵	6-42-W870T-021	W/O CCD
6	SCREW M2*3L K1 BZ ICT NY (OD=4.5,DT=0.4) 無鹵	6-35-C6120-3R0	
7	SCREW M2.5*4L K1 BK/O ICT NY 無鹵	6-35-B4125-4RA	
8	SCREW M2*4L K1 BZ ICT NY 無鹵	6-35-B6120-4RA	
9	LCD 17.3" HD+ AU B173RW01 V0 (GLARE TYPE) 無鹵	6-50-NA160-G00	
9	LCD 17.3" FHD HANNSTAR HSD173PUW1-A GLARE 無鹵	6-50-NB258-N00	
9	LCD 17.3" HD+ CHIMEI N173D6-L02 (GLARE TYPE) 無鹵	6-50-NA158-D00	
10	RUBBER (5*5*0.5) SILICON FRONT W870CU 無鹵	6-47-W8701-041	
11	COVER FOR HINGE R SABIC CM6140 7010E W870CU 無鹵	6-42-W8701-051	
12	LCD HINGE R (SECC+SK7) FOR W870CU 無鹵	6-33-W8701-011	
13	LCD CABLE LVDS L=260MM W870CU 無鹵	6-43-W8701-011	
14	CABLE CCD 5P L=520MM 無鹵W870CU	6-43-W870T-021	
15	ANTENNA WLAN 2.4G/3.5G/5G PIFA WNP 170MM 專案W870CU 無鹵	6-23-7W870-020	
16	螺絲 M2*3L K1 NI ICT GTY-PAN(OD=4.0,DT=0.6) 無鹵	6-35-B1120-3RD	
17	UVC CAMERA BISON FIX BN2805VA8-001 2M DV2655 W760S	6-88-W76SC-4900	(OPTION)
18	LCD HINGE L (SECC+SK7) FOR W870CU 無鹵	6-33-W8701-021	
19	COVER FOR HINGE L SABIC CM6140 7010E W870CU 無鹵	6-42-W8701-041	
20	ANTENNA WLAN 2.4G/3.5G/5G PIFA WNP 95MM 專案W870CU 無鹵	6-23-7W870-030	
21	LCD BACK COVER MODULE W870CU 修邊變更	6-39-W8701-022	
22	STICKER 警告中華民國專屬專案貼紙 無鹵	6-45-M741S-020	
23	BACK CASE MYLAR FOR W870CU 無鹵	6-40-W8701-010	
24	MYLAR (60*8*0.45MM,PC) M74S	6-40-00150-607	

2nd HDD

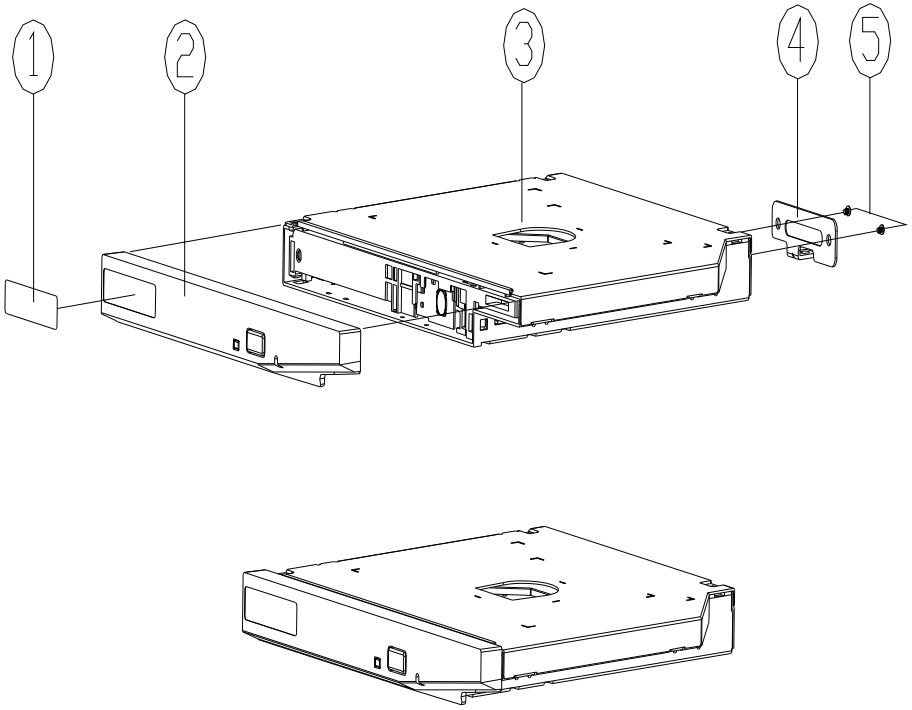


ITEM	PART NAME	PART NO	REMARK
1	SCREW M3*2.5L KI NI ICT NY -廠	6-35-B1130-2R5	
2	HDD2 BRACKET (SECC 0.8T) W870CU-廠	6-33-W870J-020	
3	HDD2 PULL MYLAR(MYLAR 0.125T) W870CU-廠	6-40-W870J-030	

Figure A - 5
2nd HDD

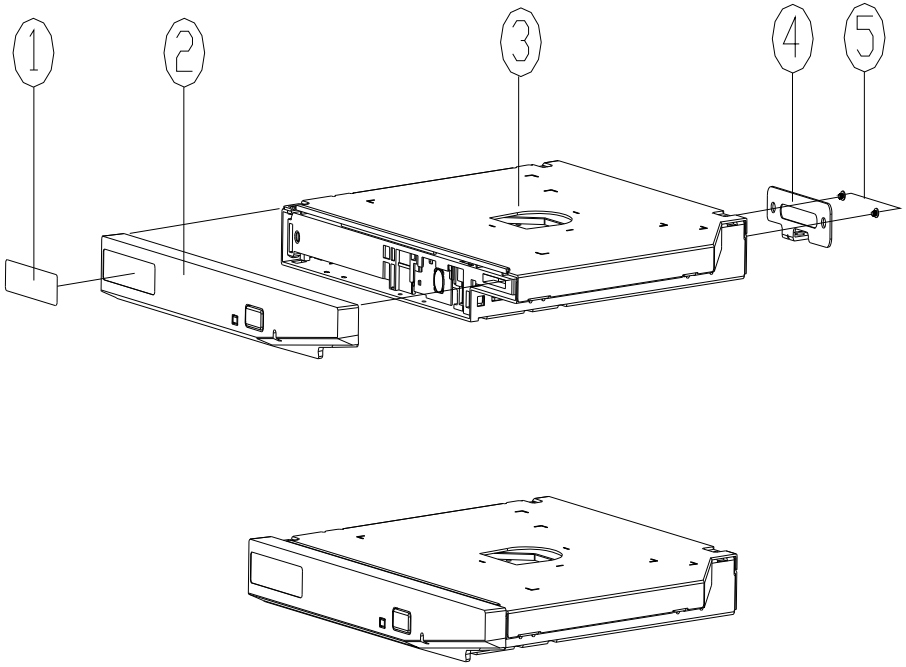
COMBO

Figure A - 6
COMBO



ITEM	PART NAME	PART NO	REMARK
1	BLU-RAY ODD BEZEL LABEL (SIZE CHANGE) W860CU	6-45-W860W-011	
2	DVD BEZEL MODULE W870CU	6-42-W870V-101	
3	[illegible]	6-85-B074X-510	
3	[illegible]	6-85-B072X-P11	
3	[illegible]	6-85-B074X-511	
3	SATA BLU-RAY COMBO 5 1/4" 4X 12.7MM DS-4E1S	6-85-B074X-L11	
3	[illegible]	6-85-B076X-510	
3	SATA BLU-RAY WRITER 5 1/4" 4X QUAD 12.7MM BDR-T09RS	6-85-B074X-B20	
4	DVD BODY BRACKET(SECC 0.8T) W870CU	6-33-W870Q-010	
5	SCREW M2*3L K1 NI ICT NY	6-35-B1120-3RA	

DVD-Dual Drive



ITEM	PART NAME	PART NO	REMARK
1	SUPER MULTI DDD BEZEL LABEL (SIZE CHANGED) W860CU	6-45-W860Q-011	
2	DVD BEZEL MODULE W870CU	6-42-W870V-101	
3	[illegible]	6-85-A0724-T03	
3	SAM DVD SUPER MULTI S-VPR DL EZ-ENH 6X12X8 DDP KEL-0200 W/BRACKET SUPPORTED RoHS	6-85-A078X-506	
4	DVD BODY BRACKET(SECC 0.8T) W870CU	6-33-W870Q-010	
5	SCREW M2*3L K1 NI ICT NY	6-35-B1120-3RA	

Figure A - 7
DVD-Dual Drive

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the ***W880CU*** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
System Block Diagram - Page B - 2	*Clock Generator - Page B - 21*	*Power VCore - Page B - 40*
Processor 1/7 - Page B - 3	*Panel, Inverter - Page B - 22*	*AC_IN, Charger - Page B - 41*
Processor 2/7 - Page B - 4	*DVI - Page B - 23*	*USB 3.0 - Page B - 42*
Processor 3/7 - Page B - 5	*HDMI - Page B - 24*	*Power Button Board - Page B - 43*
Processor 4/7 - Page B - 6	*MXM PCI-E - Page B - 25*	*LED Board - Page B - 44*
Processor 5/7 - Page B - 7	*EC-IT8502E - Page B - 26*	*Multi I/O Board - Page B - 45*
Processor 6/7 - Page B - 8	*USB, eSATA, New Card - Page B - 27*	*Touch Sensor Board - Page B - 46*
Processor 7/7 - Page B - 9	*Mini Card - Page B - 28*	*Left-LED Board - Page B - 47*
DDRIII SO-DIMM_0 - Page B - 10	*BT, TPM, MDC, LID - Page B - 29*	*Fingerprint Board - Page B - 48*
DDRIII SO-DIMM_1 - Page B - 11	*LAN, RTL8111DL, RJ45 - Page B - 30*	*Click Board - Page B - 49*
IBEXPEAK - M 1/9 - Page B - 12	*Fan, CCD, LED, Screw Hole - Page B - 31*	*W870CU Second HDD Board - Page B - 50*
IBEXPEAK - M 2/9 - Page B - 13	*Azalia Codec ALC888 - Page B - 32*	*W870CU Multi I/O Board - Page B - 51*
IBEXPEAK - M 3/9 - Page B - 14	*SRS-AP8202, SATA ODD & HDD - Page B - 33*	*W870CU CIR Board - Page B - 52*
IBEXPEAK - M 4/9 - Page B - 15	*AMP-TPA6017, Subwoofer - Page B - 34*	*W870CU LED Board - Page B - 53*
IBEXPEAK - M 5/9 - Page B - 16	*5V, 3.3V, 3.3VS, 5VS, 1.5VS - Page B - 35*	*W870CU RJ11 & TV Board - Page B - 54*
IBEXPEAK - M 6/9 - Page B - 17	*VDD3, VDD5 - Page B - 36*	*W870CU Power Button Board - Page B - 55*
IBEXPEAK - M 7/9 - Page B - 18	*Power 1.8VS, 1.1VS - Page B - 37*	*W870CU Right-Logo Board - Page B - 56*
IBEXPEAK - M 8/9 - Page B - 19	*Power 1.5V/0.75V - Page B - 38*	*W870CU Left-Logo Board - Page B - 57*
IBEXPEAK - M 9/9 - Page B - 20	*Power 1.1VS_VTT - Page B - 39*	*W870CU Touch Sensor Board - Page B - 58*

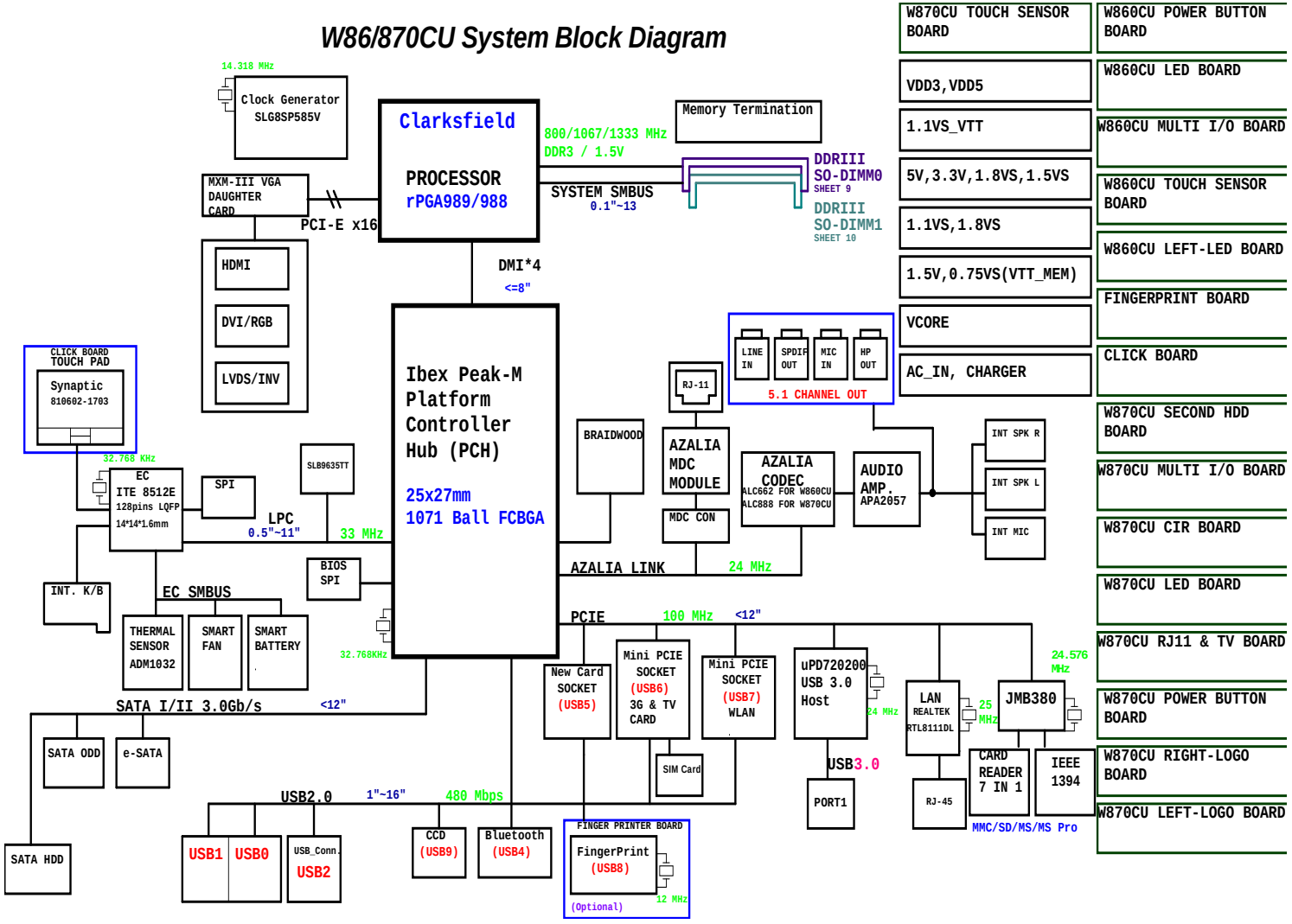
Table B - 1
Schematic Diagrams

Version Note

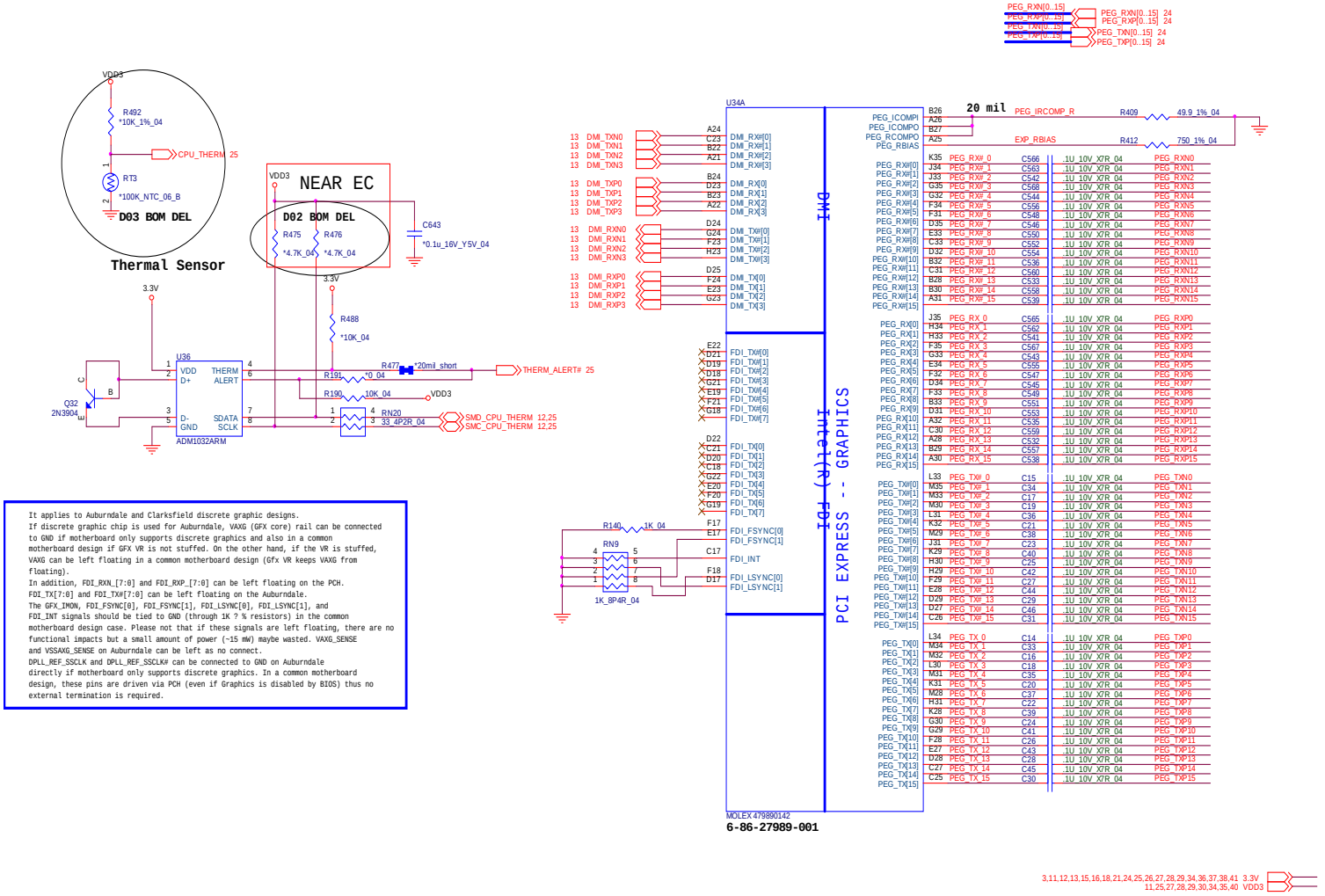
The schematic diagrams in this chapter are based upon version 6-7P-W860H-007. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 57
System Block Diagram



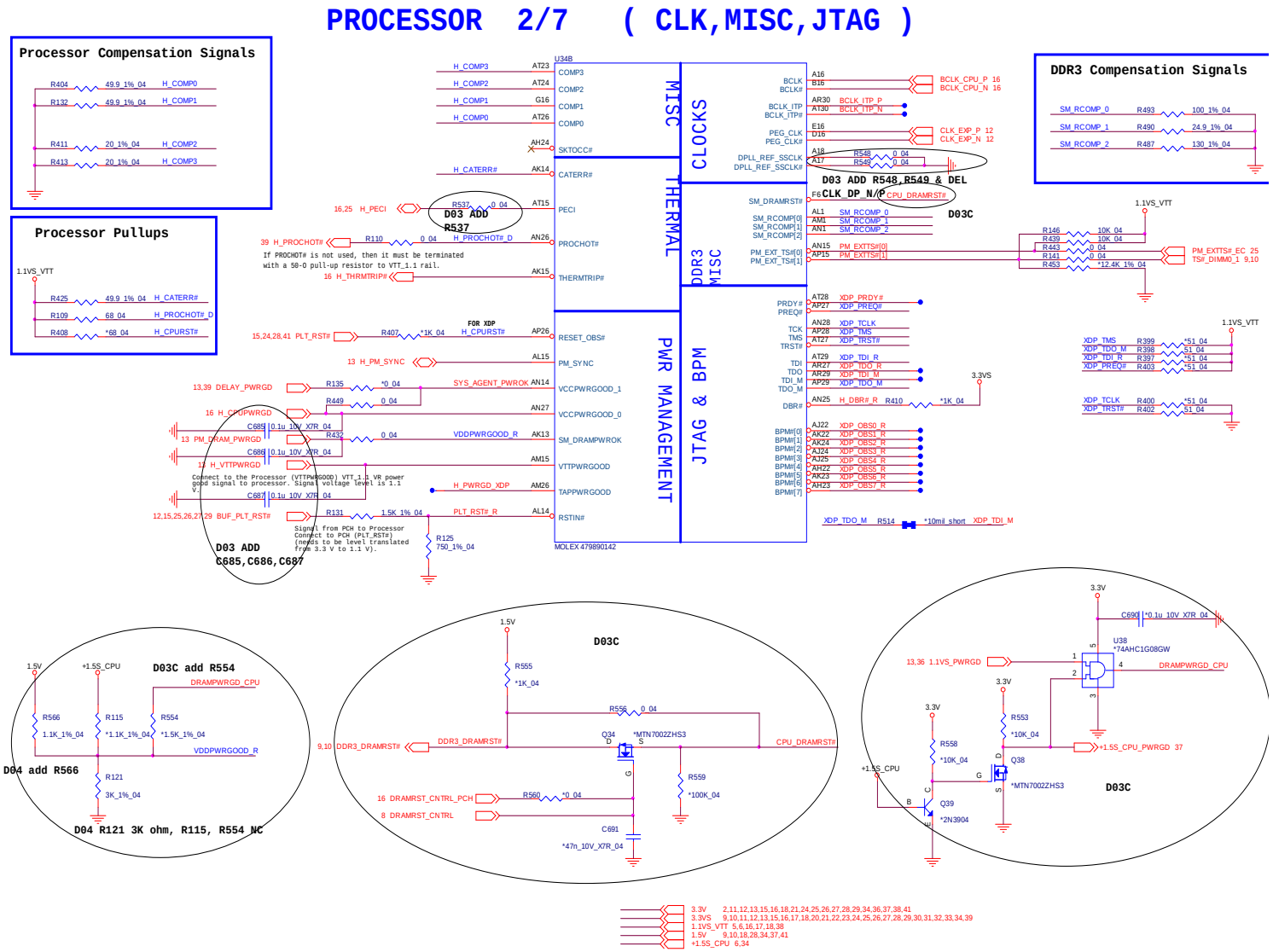
Processor 1/7


PROCESSOR 1/7 (DMI,PEG,FDI)
Thermal Sensor
D03 BOM DEL
D02 BOM DEL
NEAR EC
ADM1032ARM
U34A
DMI
PCI EXPRESS - GRAPHICS
Intel(R) FDI
MOLEX 479890142
6-86-27989-001
20 mil
It applies to Auburndale and Clarksfield discrete graphic designs.
If discrete graphic chip is used for Auburndale, VAXG (GFX core) rail can be connected to GND if motherboard only supports discrete graphics and also in a common motherboard design if GFX VR is not stuffed. On the other hand, if the VR is stuffed, VAXG can be left floating in a common motherboard design (Gfx VR keeps VAXG from floating).
In addition, FDI_RXN_[7:0] and FDI_RXP_[7:0] can be left floating on the PCH.
FDI_TX[7:0] and FDI_TX#[7:0] can be left floating on the Auburndale.
The GFX_IMON, FDI_FSYNC[0], FDI_FSYNC[1], FDI_LSYNC[0], FDI_LSYNC[1], and FDI_INT signals should be tied to GND (through 1K ? % resistors) in the common motherboard design case. Please not that if these signals are left floating, there are no functional impacts but a small amount of power (~15 mW) maybe wasted. VAXG_SENSE and VSSAXG_SENSE on Auburndale can be left as no connect.
DPLL_REF_SSCLK and DPLL_REF_SSCLK# can be connected to GND on Auburndale directly if motherboard only supports discrete graphics. In a common motherboard design, these pins are driven via PCH (even if Graphics is disabled by BIOS) thus no external termination is required.

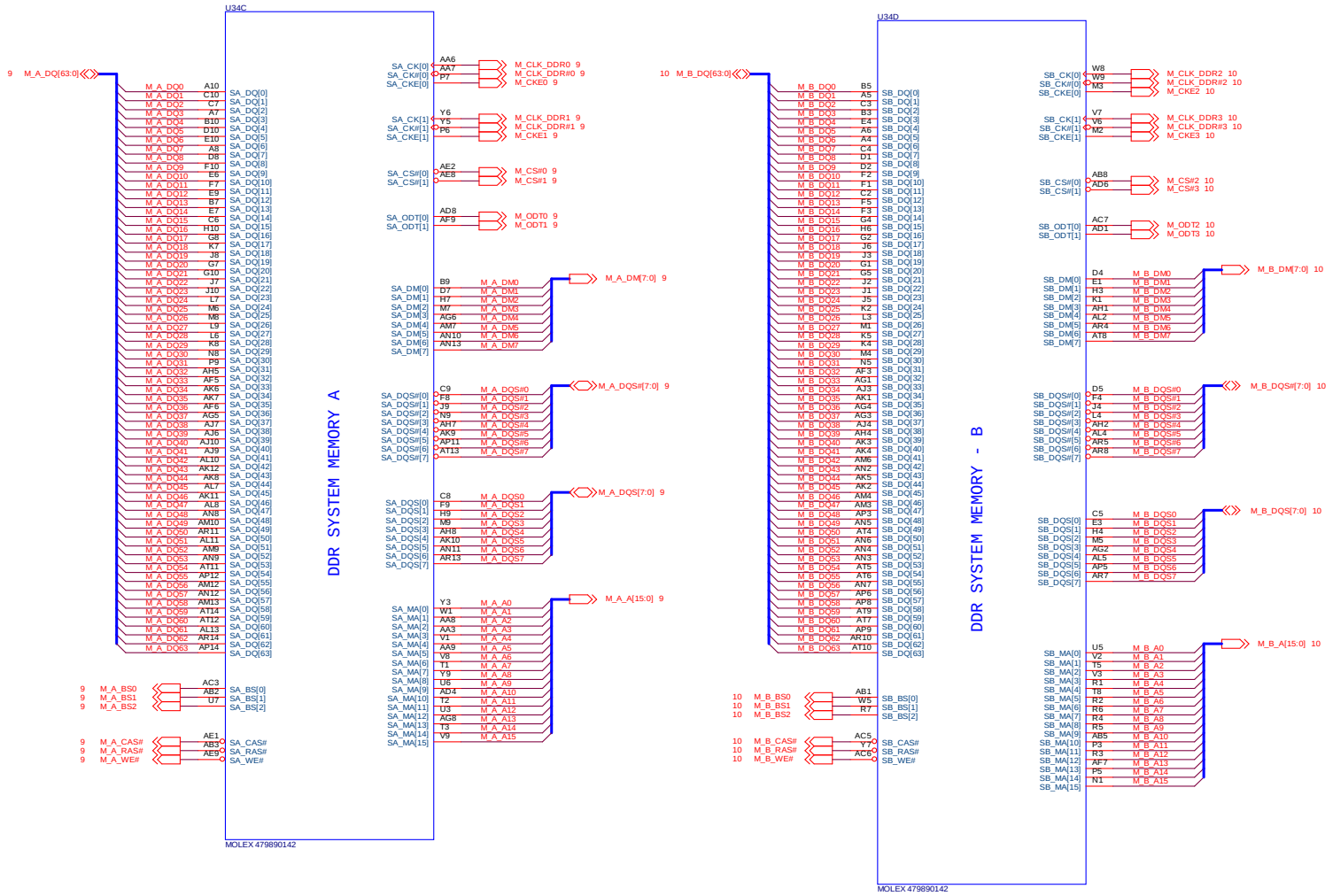
Sheet 2 of 57
Processor 1/7

Processor 2/7

Sheet 3 of 57
Processor 2/7



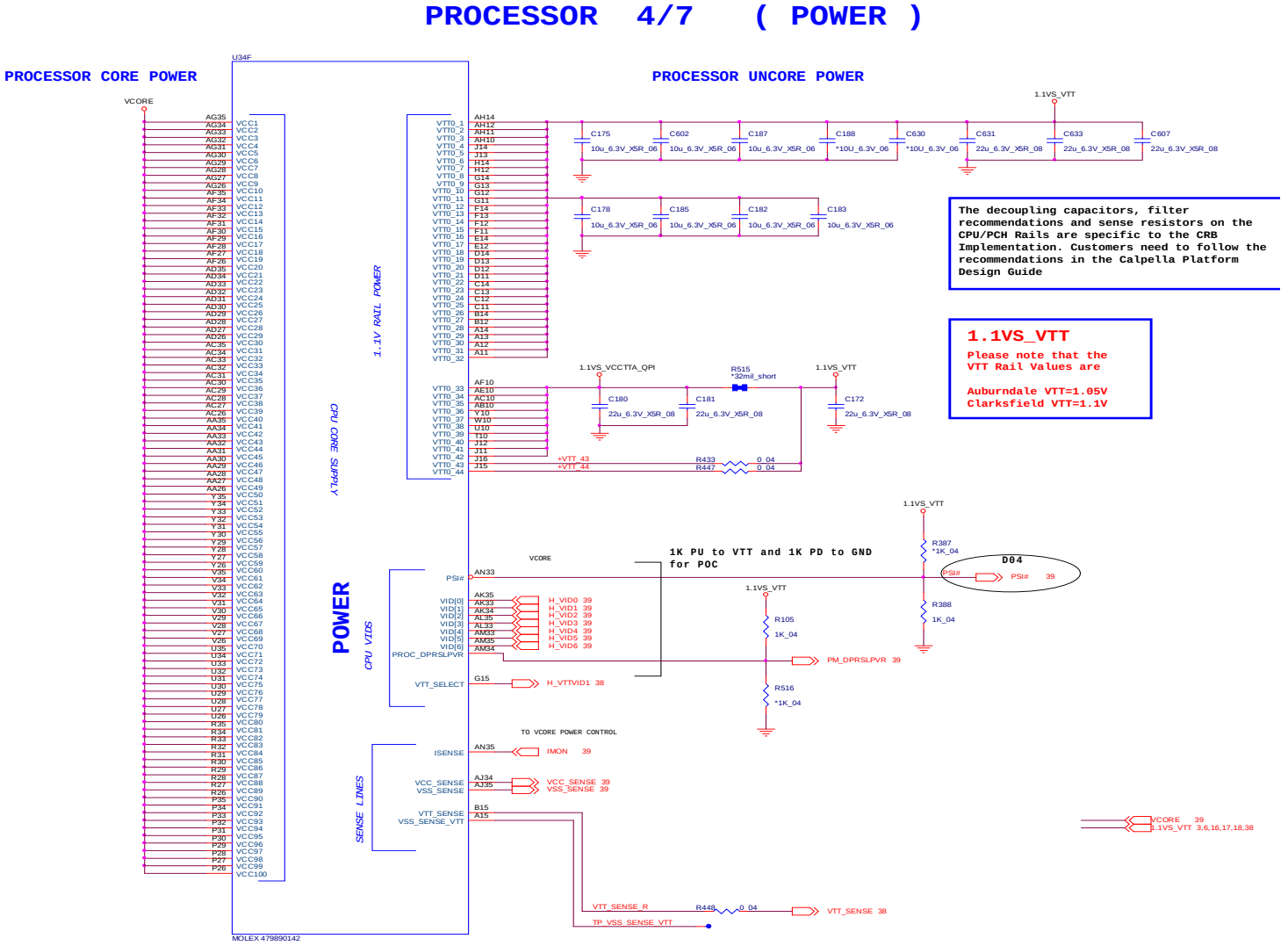
Processor 3/7



Sheet 4 of 57
Processor 3/7

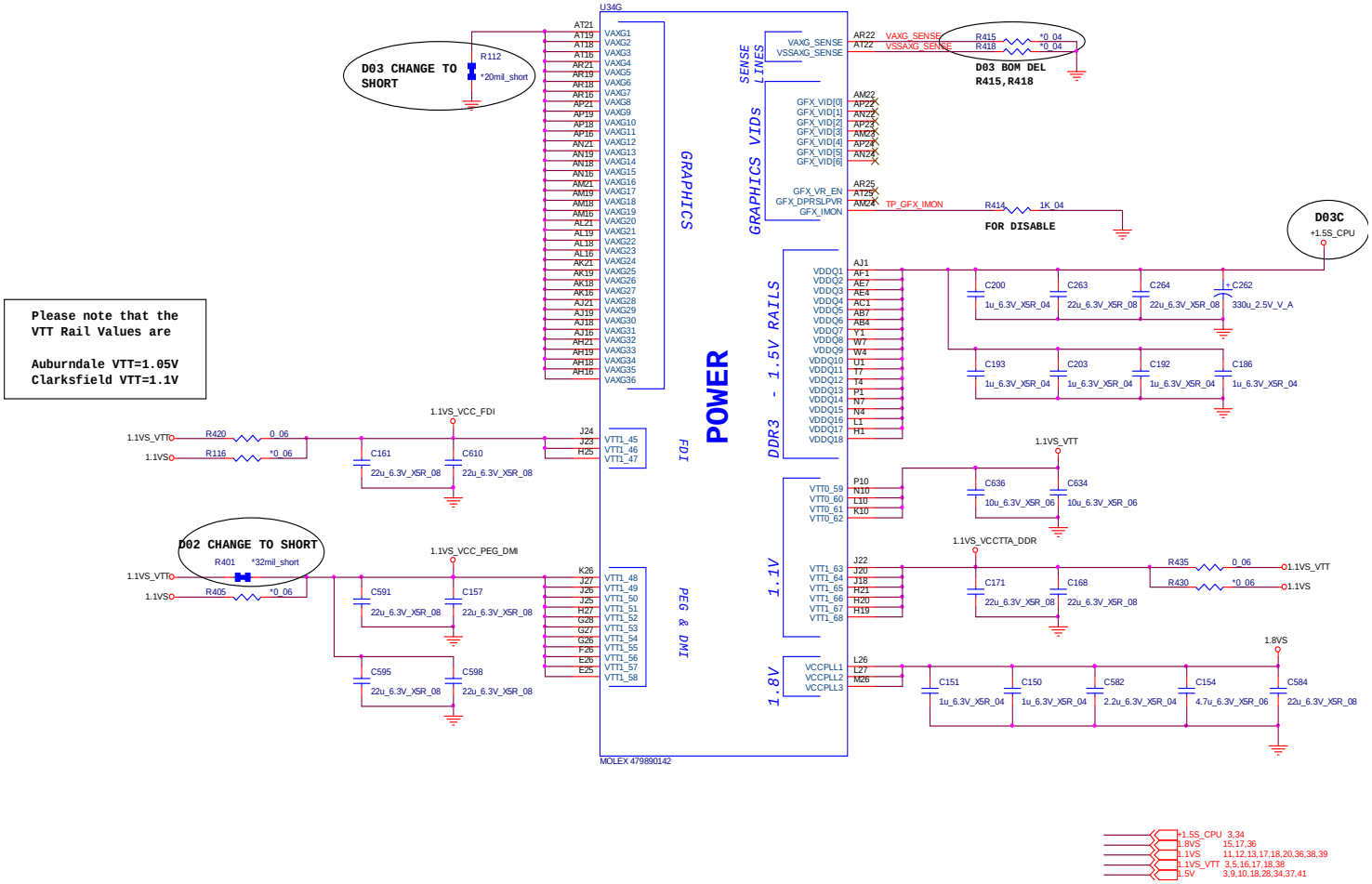
Processor 4/7

Sheet 5 of 57
Processor 4/7


PROCESSOR 4/7 (POWER)
PROCESSOR CORE POWER
PROCESSOR UNCORE POWER
U34F
VCORE
1.1VS_VTT
1.1V RAIL POWER
CPU CORE SUPPLY
POWER
CPU VIDS
SENSE LINES
The decoupling capacitors, filter recommendations and sense resistors on the CPU/PCH Rails are specific to the CRB Implementation. Customers need to follow the recommendations in the Calpella Platform Design Guide
1.1VS_VTT
Please note that the VTT Rail Values are
Auburndale VTT=1.05V
Clarksfield VTT=1.1V
1K PU to VTT and 1K PD to GND for POC
D04
TO VCORE POWER CONTROL
MOLEX 479890142

Processor 5/7

PROCESSOR 5/7 (GRAPHICS POWER)

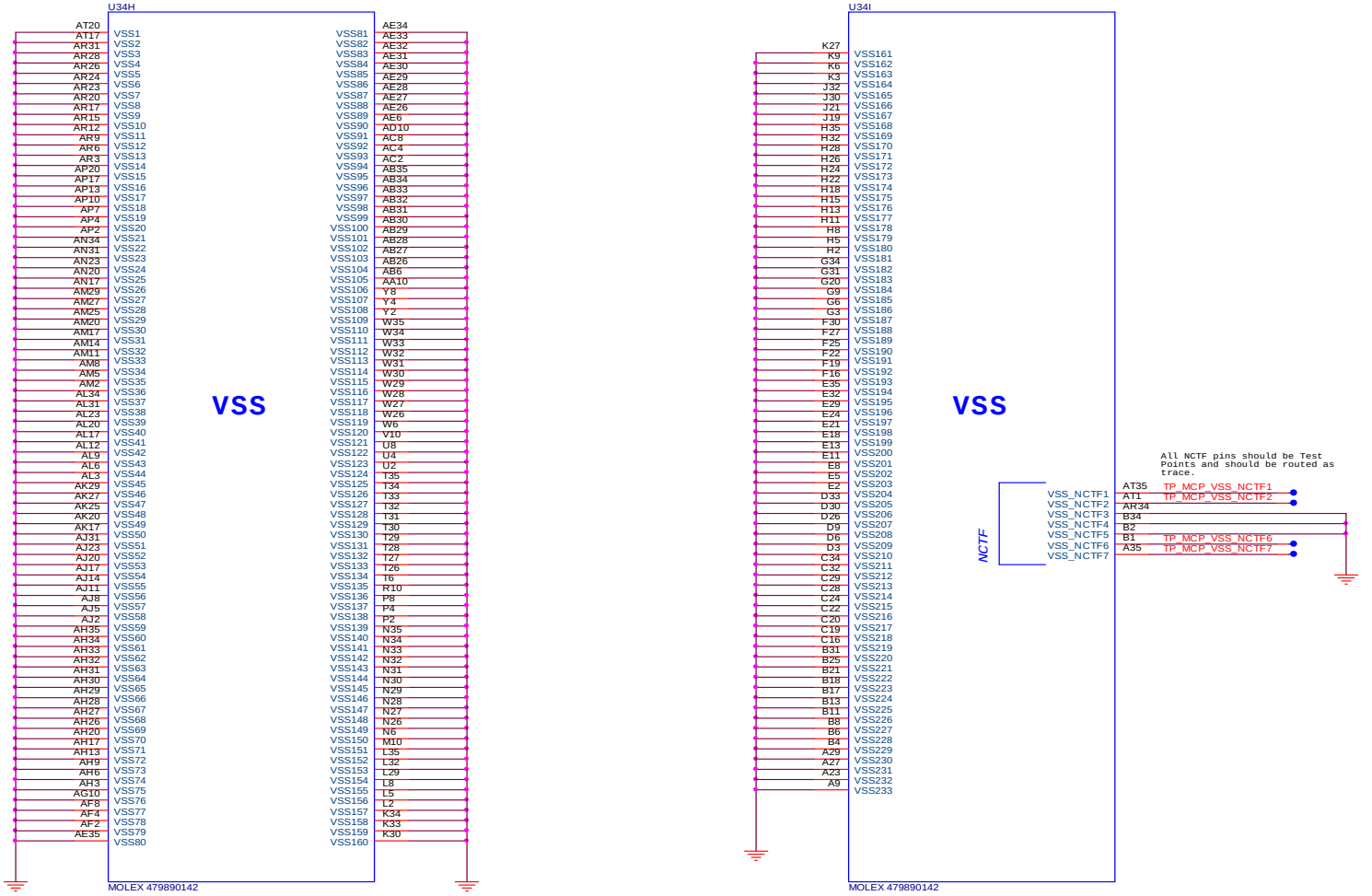


Sheet 6 of 57
Processor 5/7

Processor 6/7

Sheet 7 of 57
Processor 6/7

PROCESSOR 6/7 (GND)



Processor 7/7

PROCESSOR 7/7 (RESERVED)

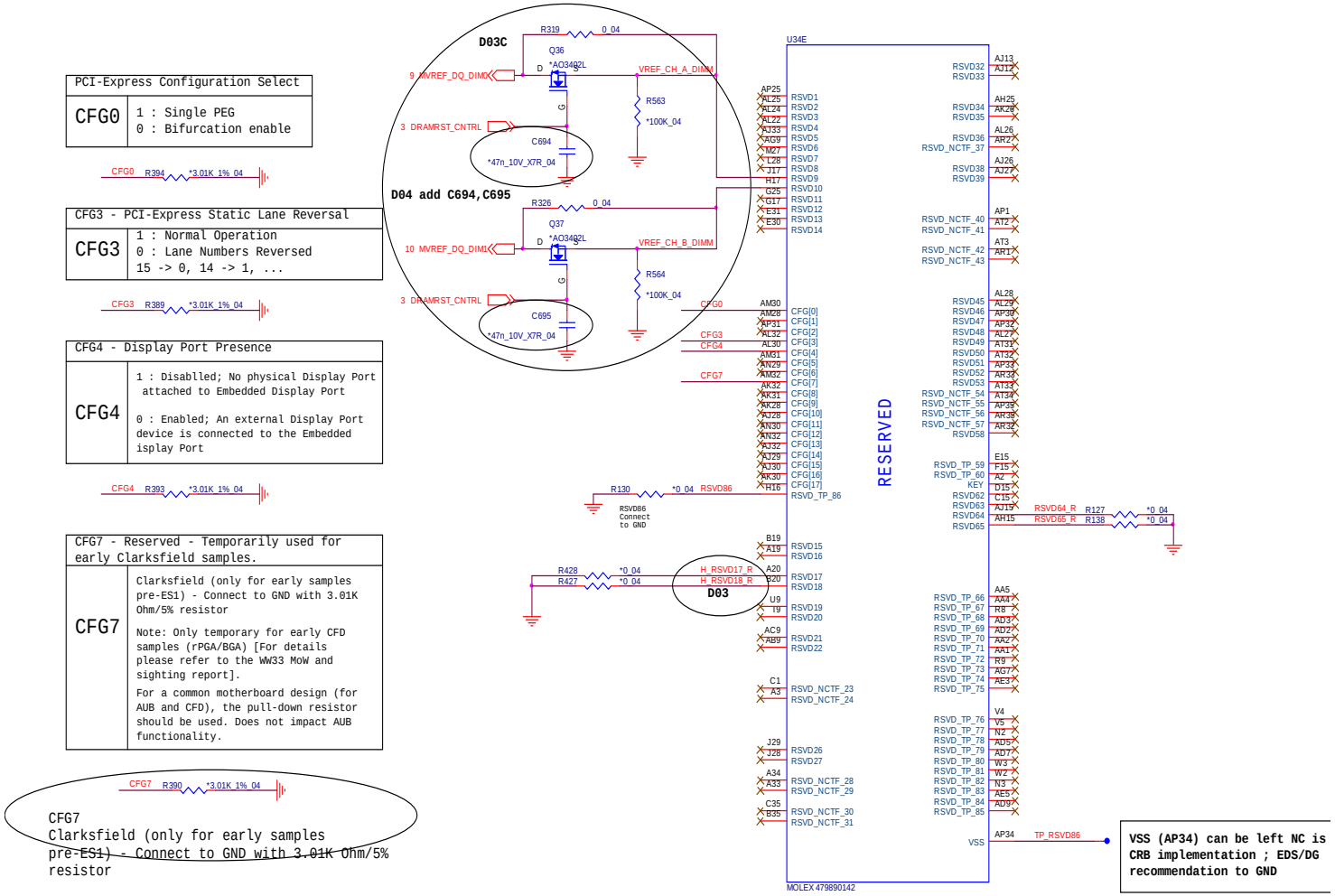
PCI-Express Configuration Select	
CFG0	1 : Single PEG 0 : Bifurcation enable

CFG3 - PCI-Express Static Lane Reversal	
CFG3	1 : Normal Operation 0 : Lane Numbers Reversed 15 -> 0, 14 -> 1, ...

CFG4 - Display Port Presence	
CFG4	1 : Disablled; No physical Display Port attached to Embedded Display Port 0 : Enabled; An external Display Port device is connected to the Embedded isplay Port

CFG7 - Reserved - Temporarily used for early Clarksfield samples.	
CFG7	Clarksfield (only for early samples pre-ES1) - Connect to GND with 3.01K Ohm/5% resistor Note: Only temporary for early CFD samples (rPGA/BGA) [For details please refer to the WW33 MoW and sighting report]. For a common motherboard design (for AUB and CFD), the pull-down resistor should be used. Does not impact AUB functionality.

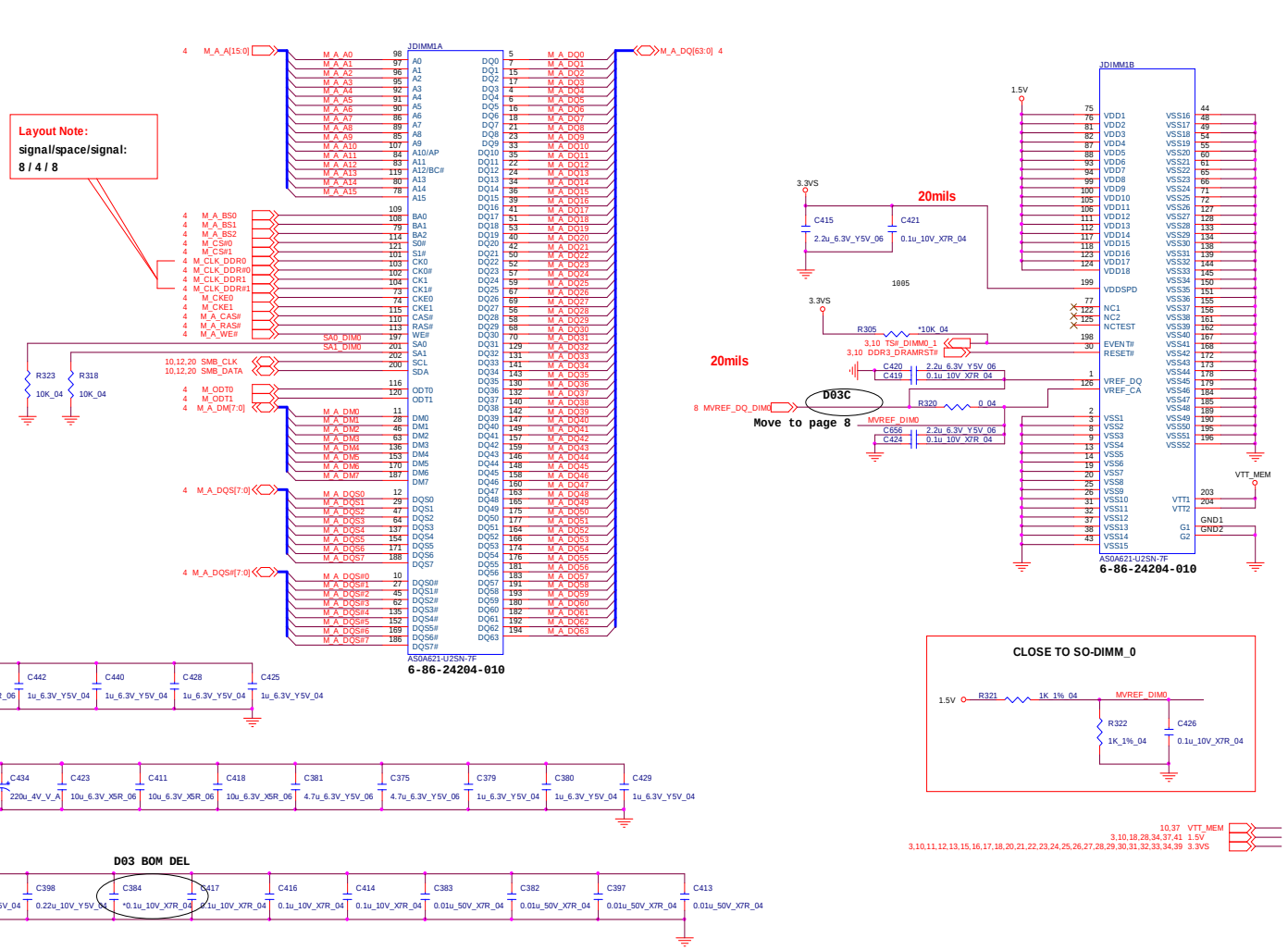
CFG7
Clarksfield (only for early samples
pre-ES1) - Connect to GND with 3.01K Ohm/5%
resistor



Sheet 8 of 57
Processor 7/7

DDRIII SO-DIMM_0

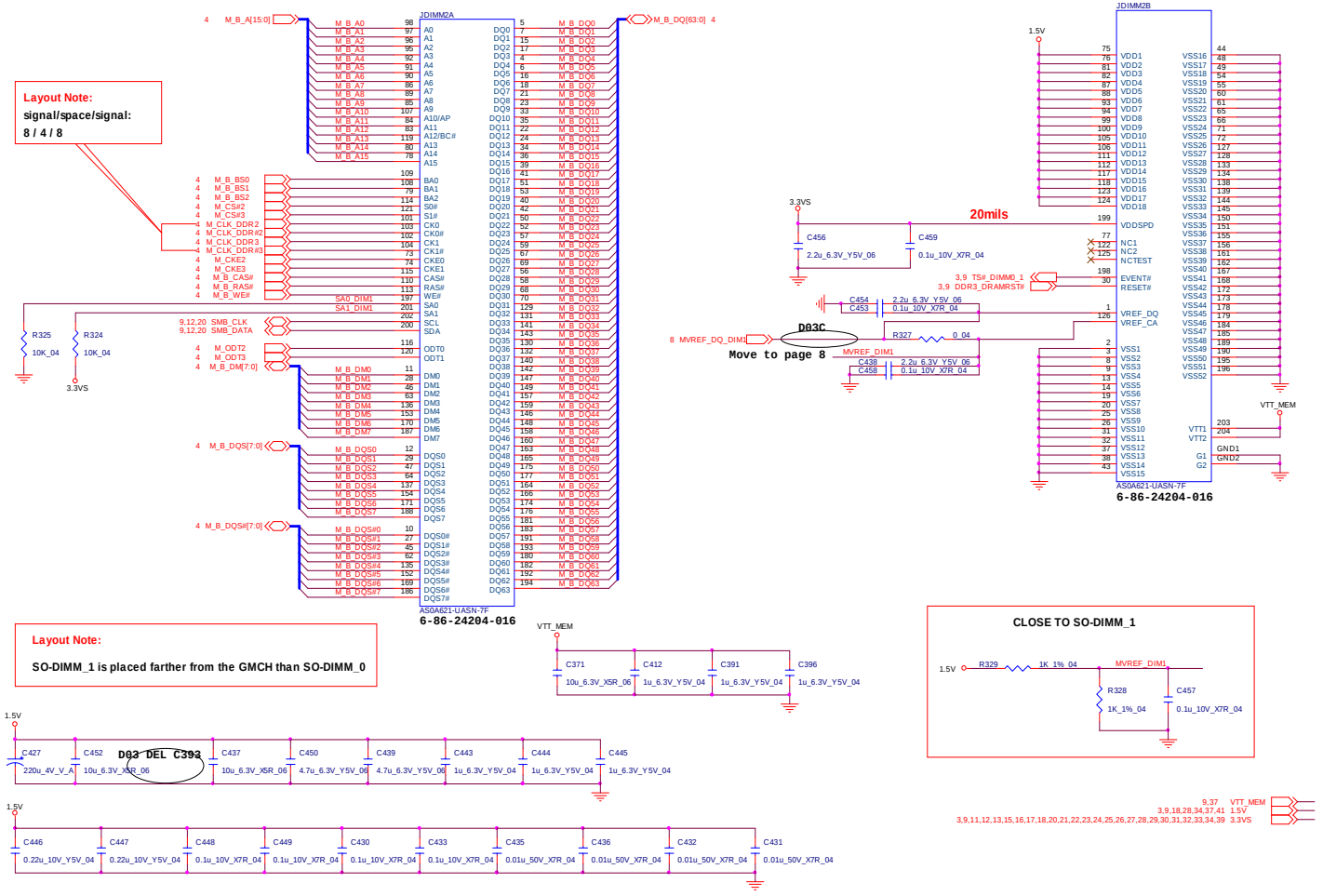
Sheet 9 of 57
DDRIII SO-DIMM _0



DDRIII SO-DIMM_1

SO-DIMM B

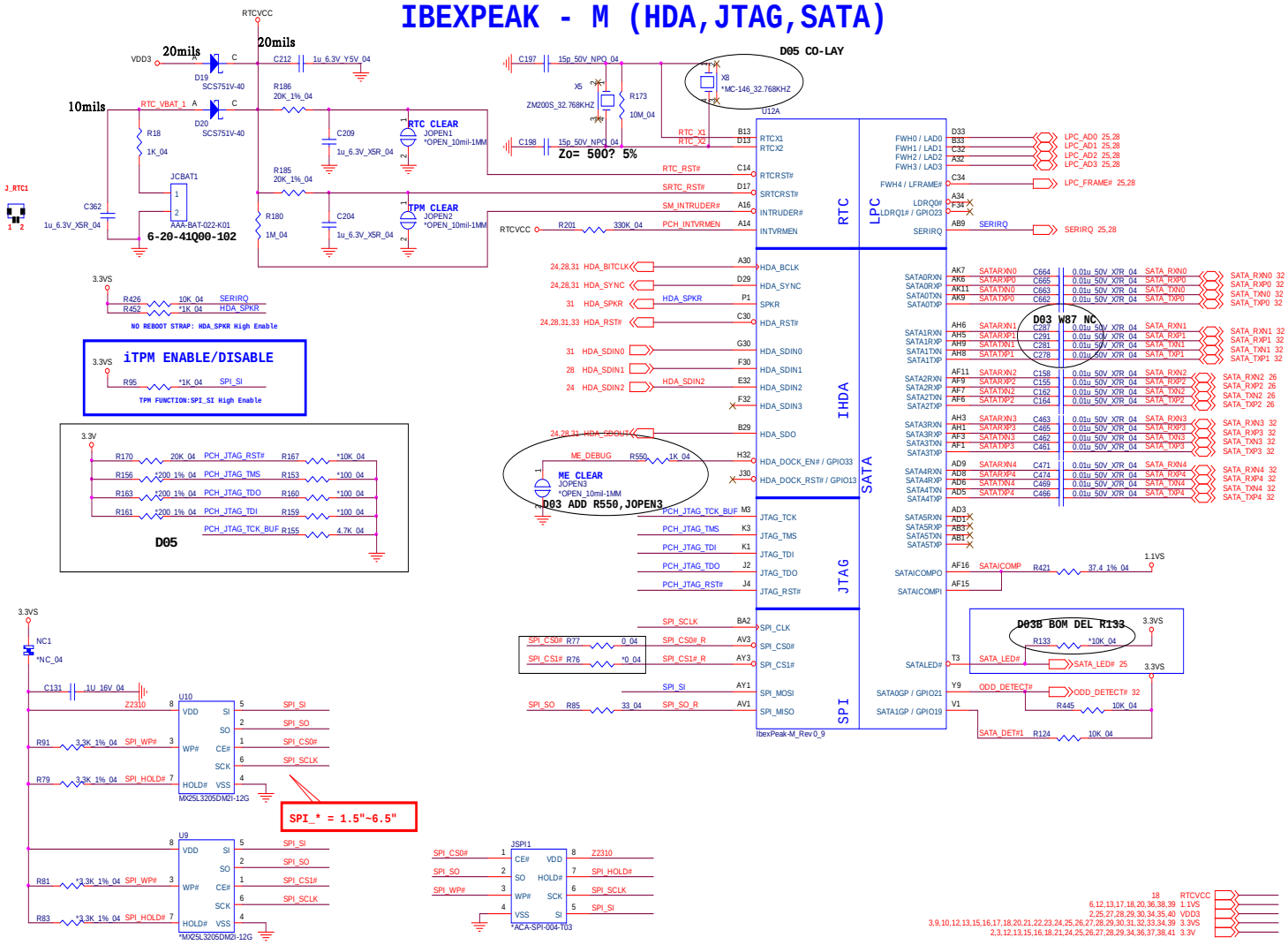
CHANGE TO STANDARD



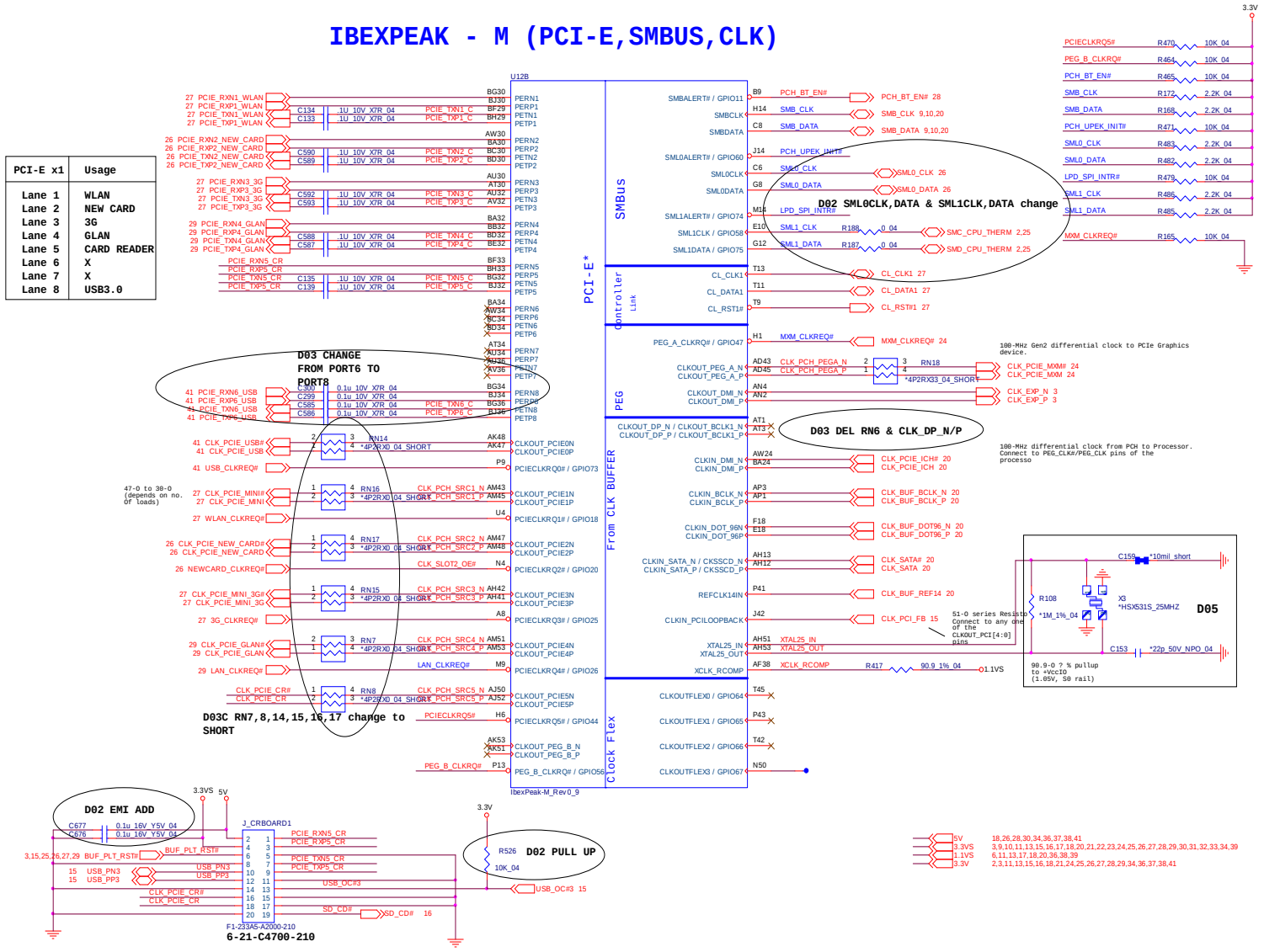
Sheet 10 of 57
DDRIII SO-DIMM _1

IBEXPEAK - M 1/9

Sheet 11 of 57
IBEXPEAK - M 1/9



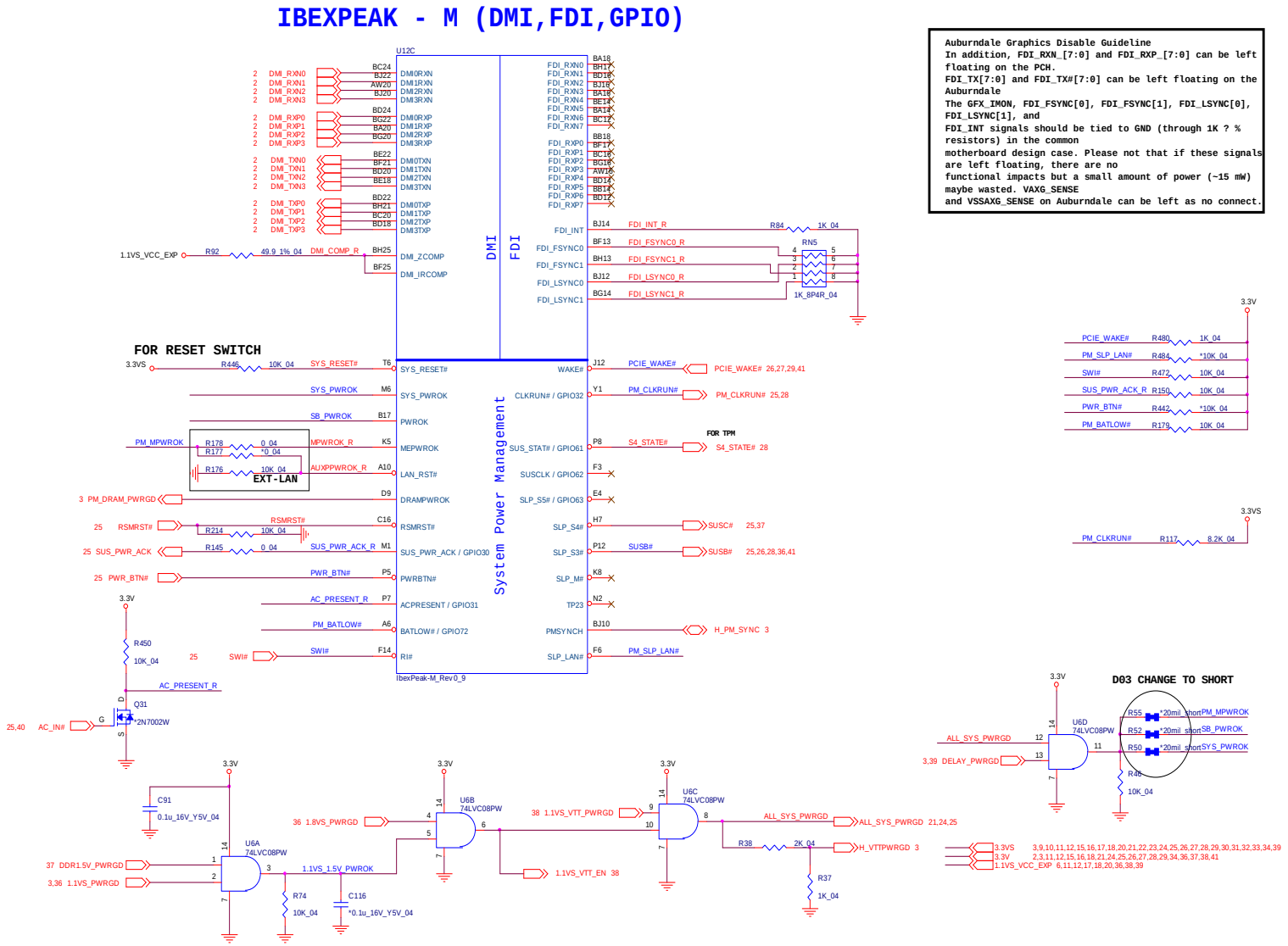
IBEXPEAK - M 2/9



Sheet 12 of 57
IBEXPEAK - M 2/9

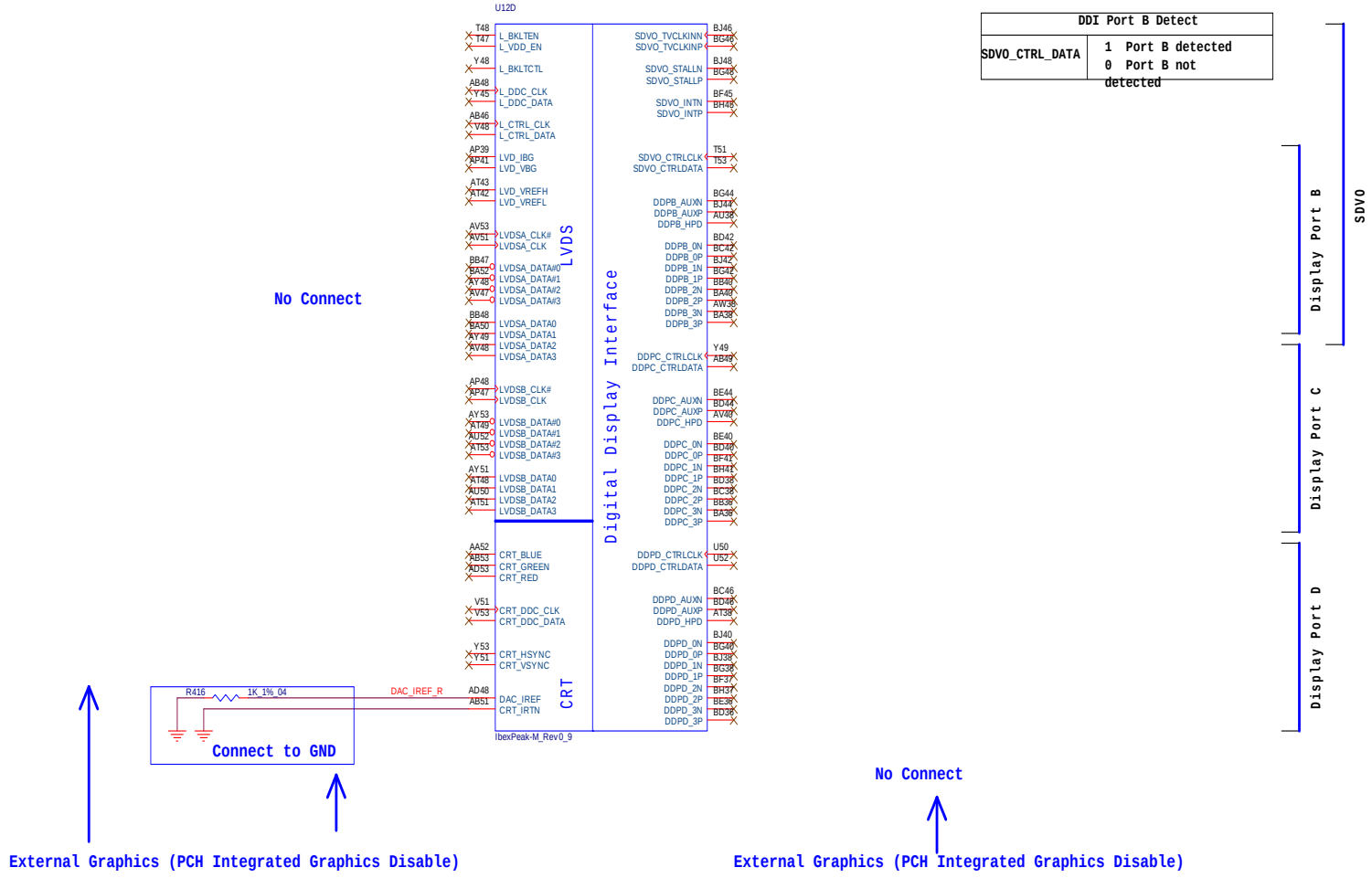
IBEXPEAK - M 3/9

Sheet 13 of 57
IBEXPEAK - M 3/9


IBEXPEAK - M (DMI,FDI,GPIO)
Auburndale Graphics Disable Guideline
In addition, FDI_RXN_[7:0] and FDI_RXP_[7:0] can be left floating on the PCH.
FDI_TX[7:0] and FDI_TX#[7:0] can be left floating on the Auburndale
The GFX_IMON, FDI_FSYNC[0], FDI_FSYNC[1], FDI_LSYNC[0], FDI_LSYNC[1], and
FDI_INT signals should be tied to GND (through 1K ? % resistors) in the common
motherboard design case. Please not that if these signals are left floating, there are no
functional impacts but a small amount of power (~15 mW) maybe wasted. VAXG_SENSE
and VSSAXG_SENSE on Auburndale can be left as no connect.
U12C
DMI
FDI
System Power Management
FOR RESET SWITCH
EXT-LAN
FOR TPM
D03 CHANGE TO SHORT
IbexPeak-M_Rev 0_9

IBEXPEAK - M 4/9

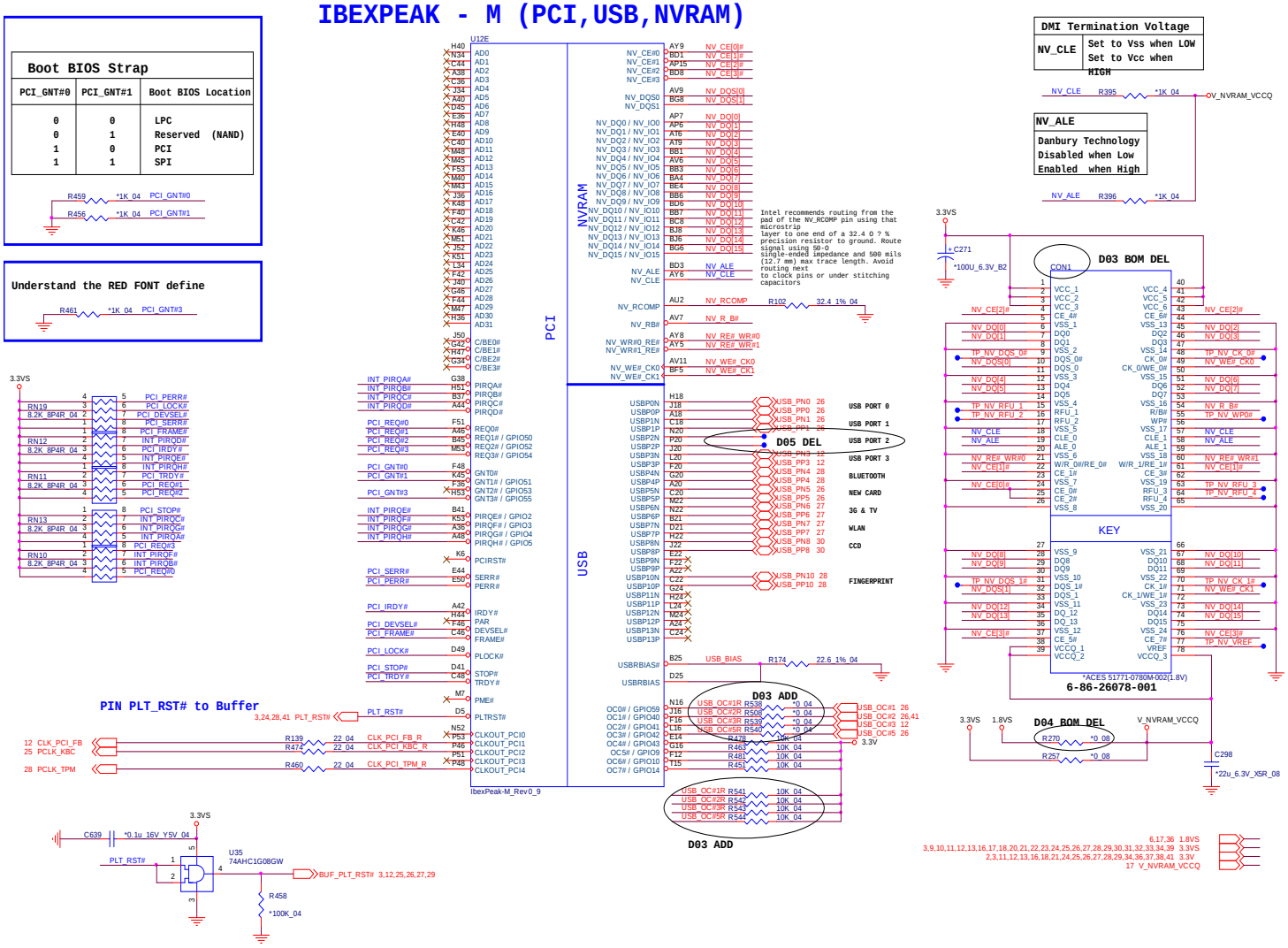
IBEXPEAK - M (LVDS,DDI)



Sheet 14 of 57
IBEXPEAK - M 4/9

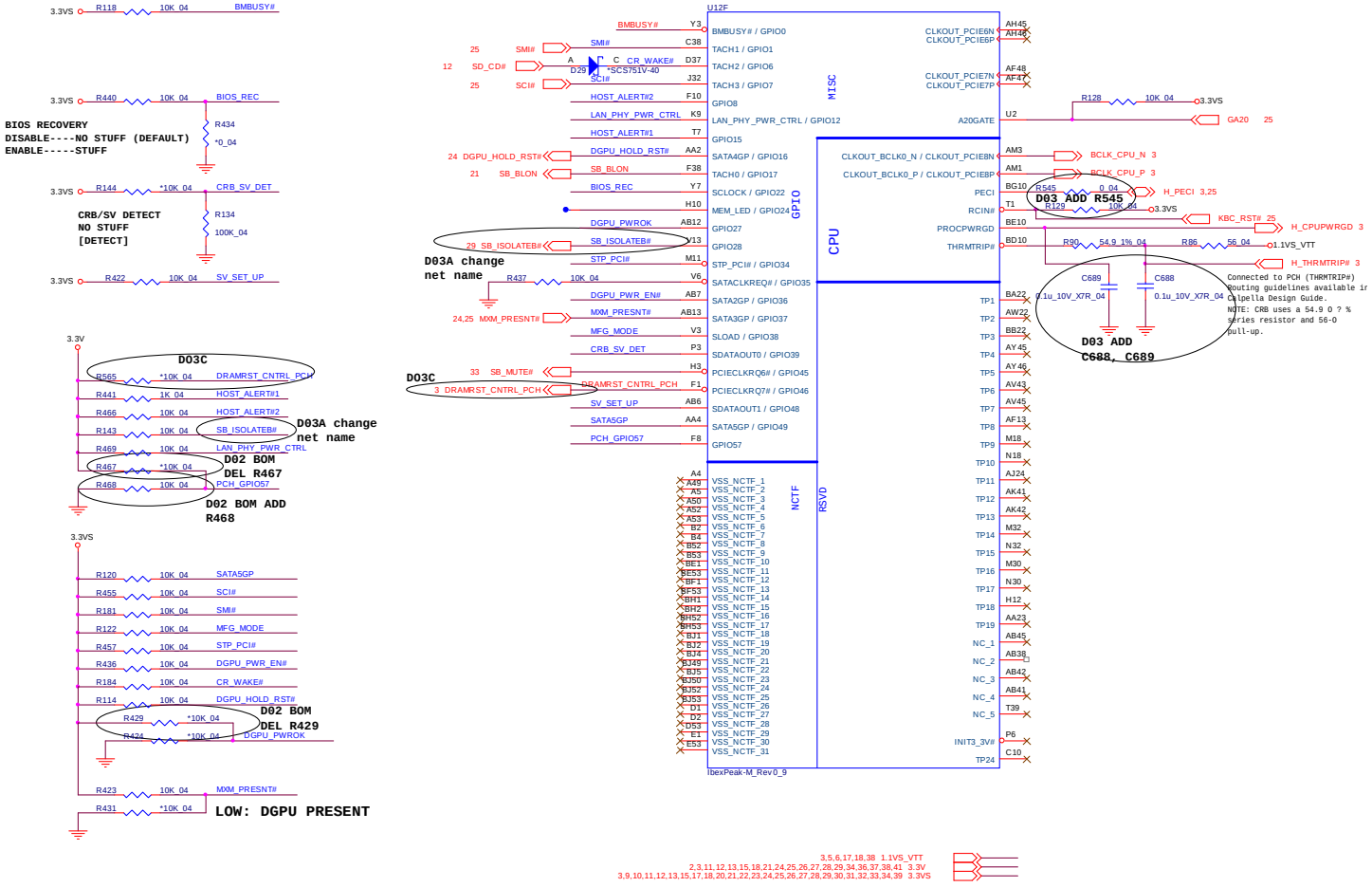
IBEXPEAK - M 5/9

Sheet 15 of 57
IBEXPEAK - M 5/9



IBEXPEAK - M 6/9

IBEXPEAK - M (GPIO,VSS_NCTF,RSVD)

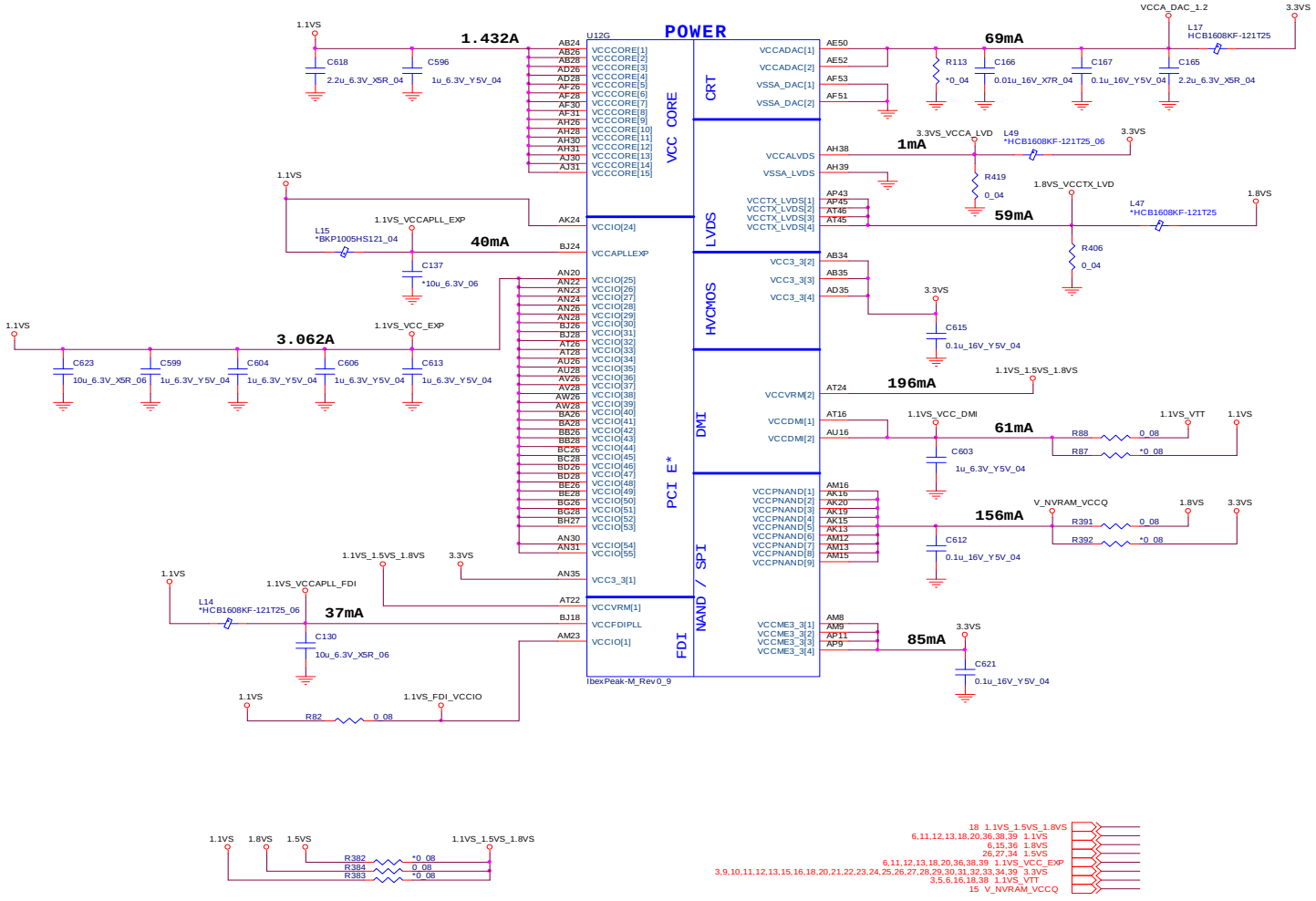


Sheet 16 of 57
IBEXPEAK - M 6/9

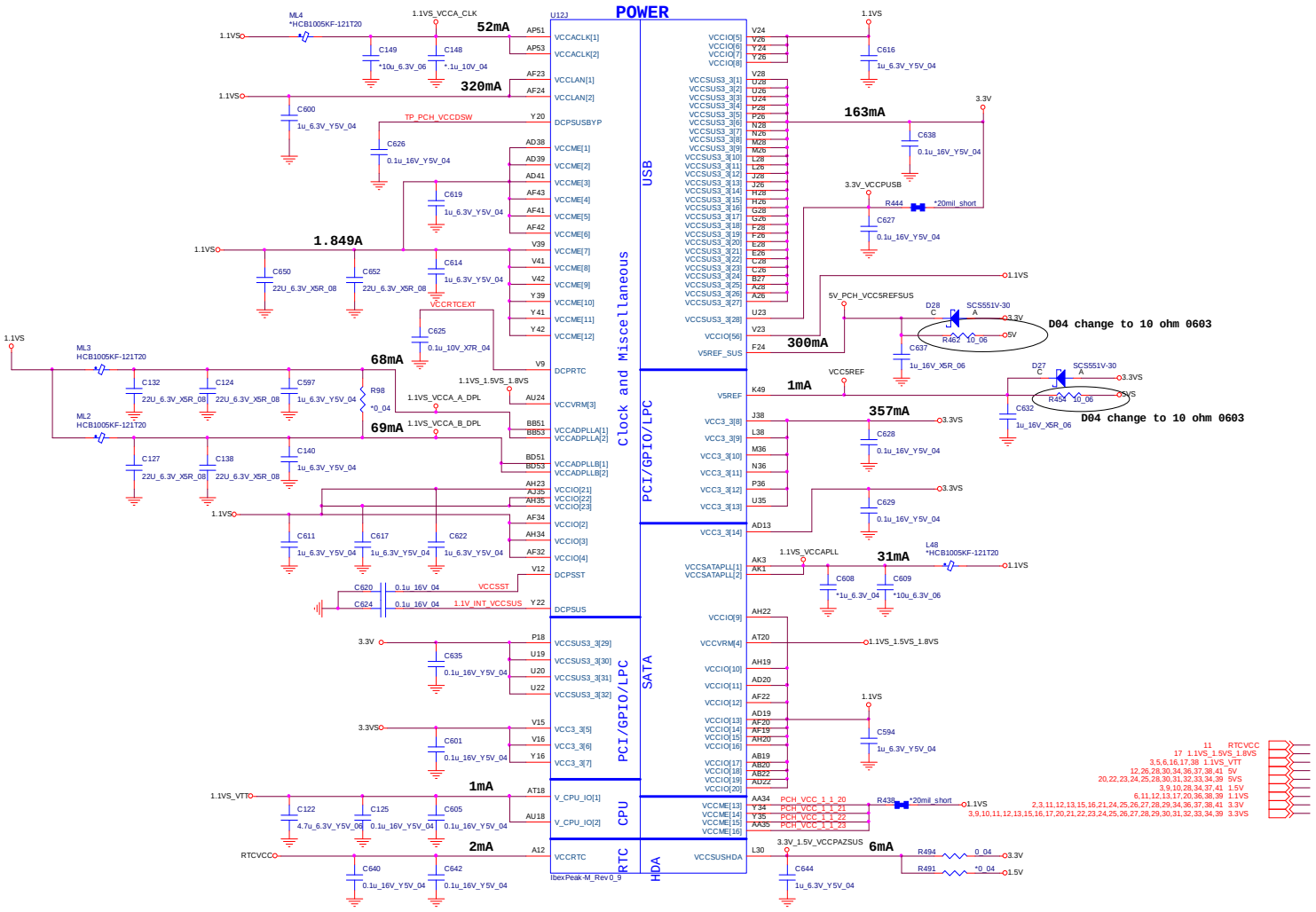
IBEXPEAK - M 7/9

Sheet 17 of 57
IBEXPEAK - M 7/9

IBEXPEAK - M (POWER)



IBEXPEAK - M 8/9

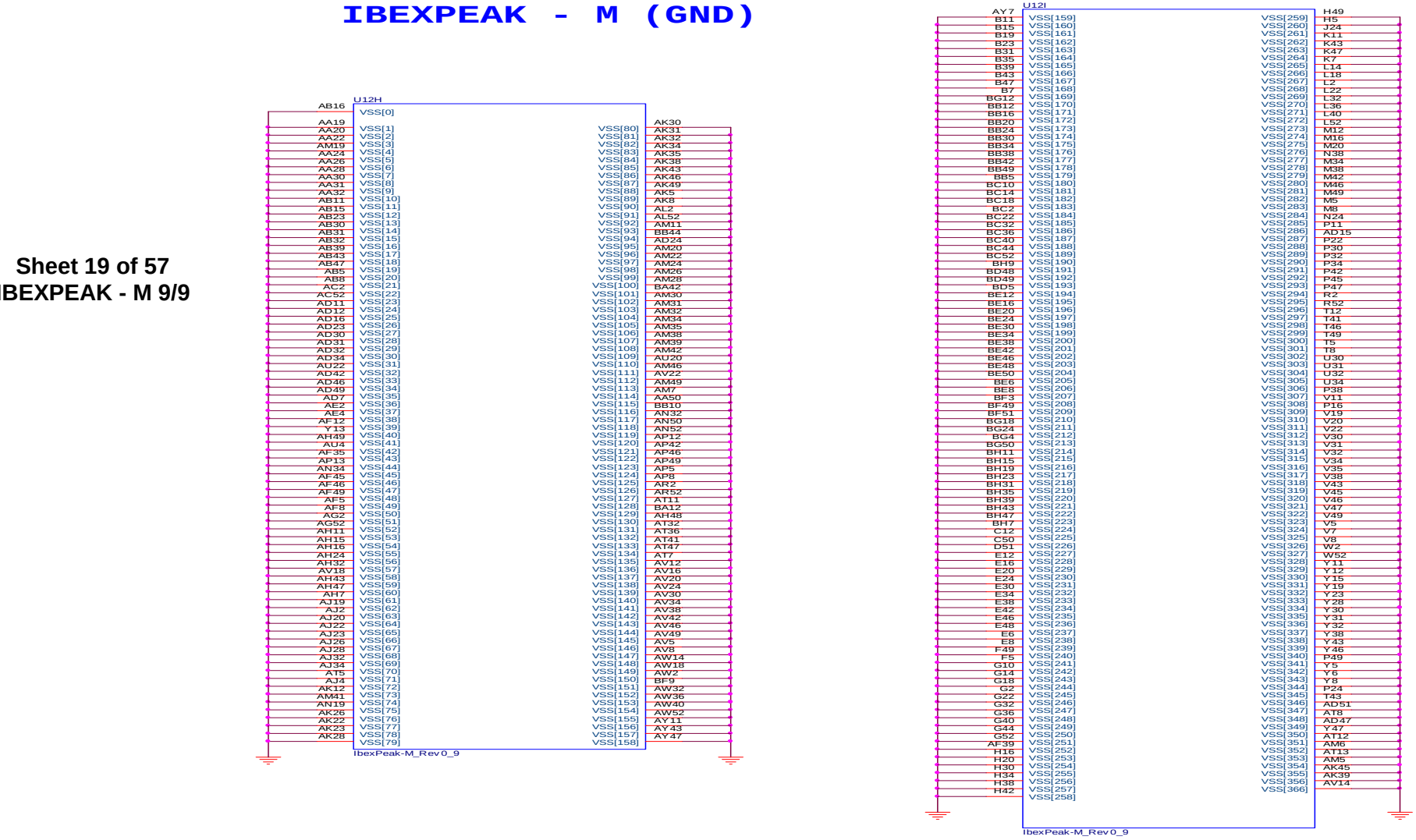


Sheet 18 of 57
IBEXPEAK - M 8/9

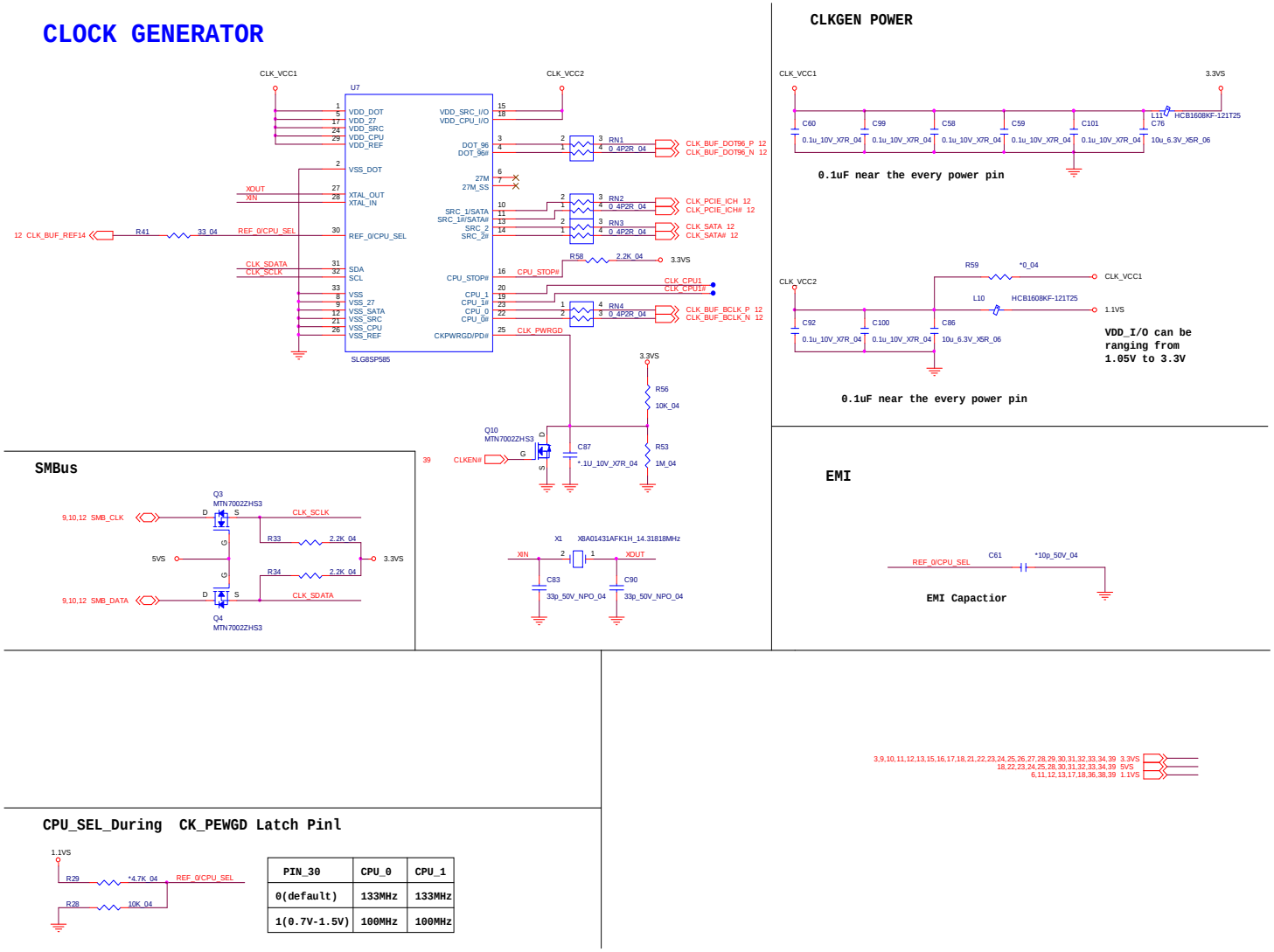
IBEXPEAK - M 9/9

Sheet 19 of 57
IBEXPEAK - M 9/9

IBEXPEAK - M (GND)



Clock Generator



PIN_30	CPU_0	CPU_1
0(default)	133MHz	133MHz
1(0.7V-1.5V)	100MHz	100MHz

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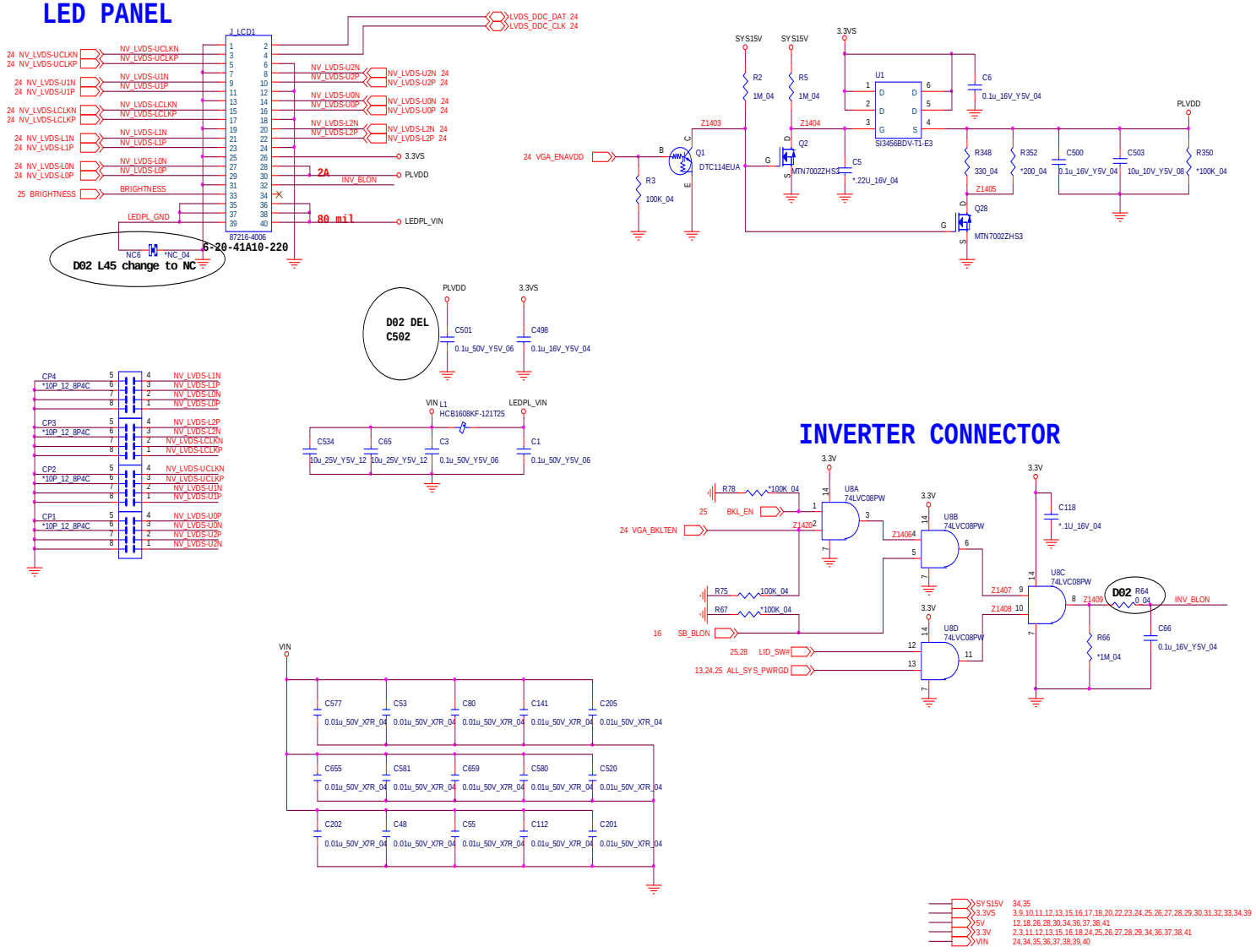
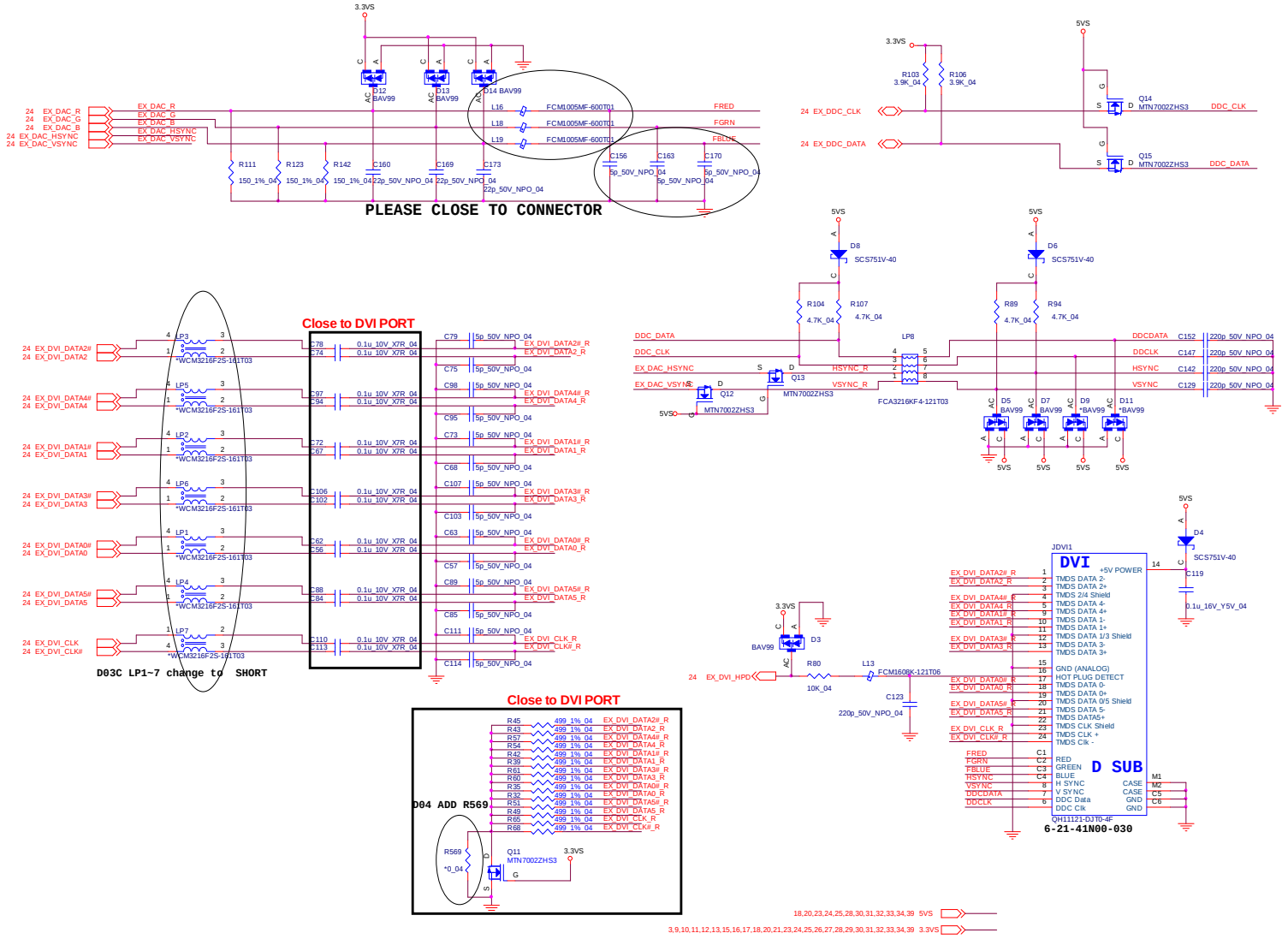
Clock Generator

Panel, Inverter

Sheet 21 of 57
Panel, Inverter



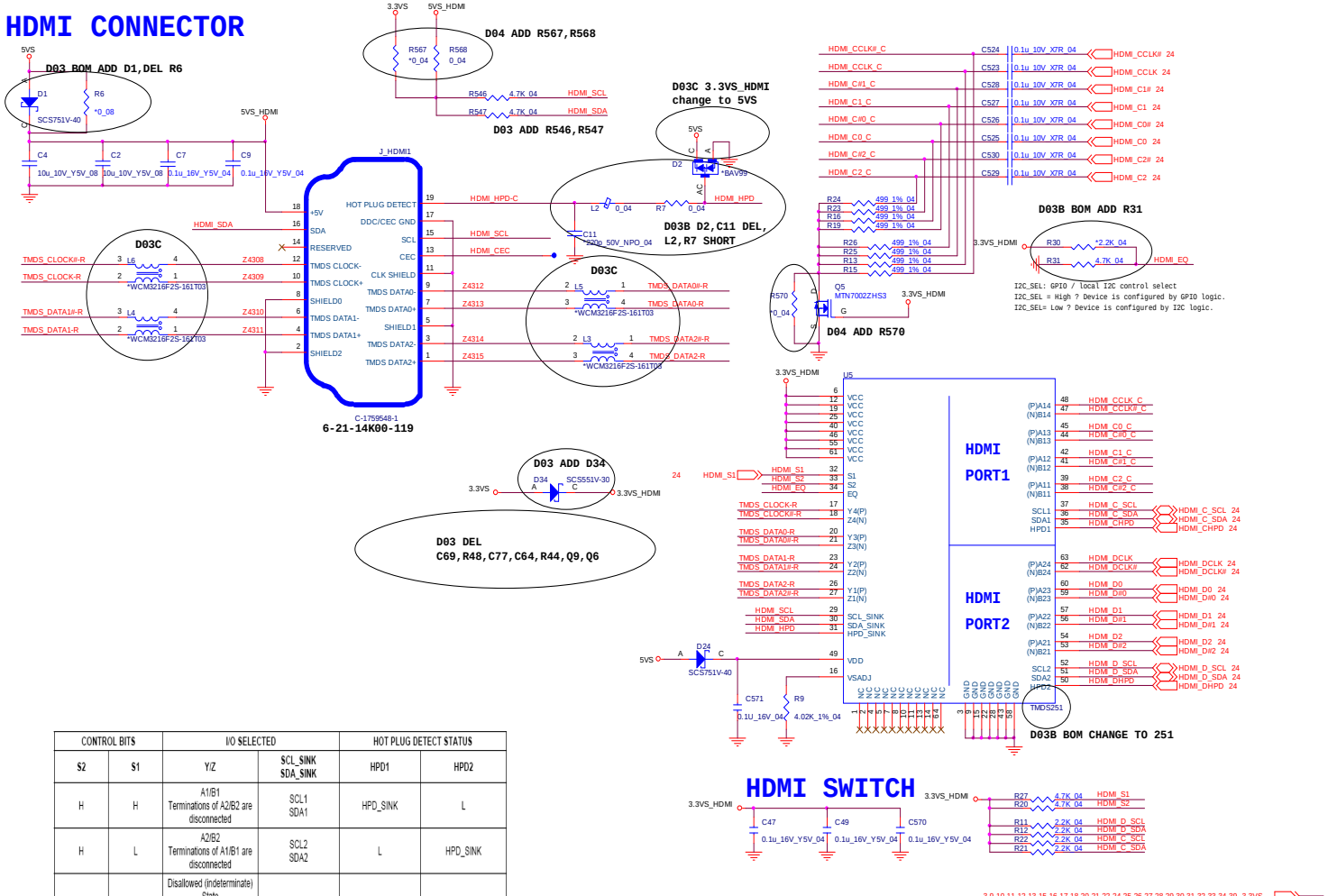
DVI



Sheet 22 of 57
DVI

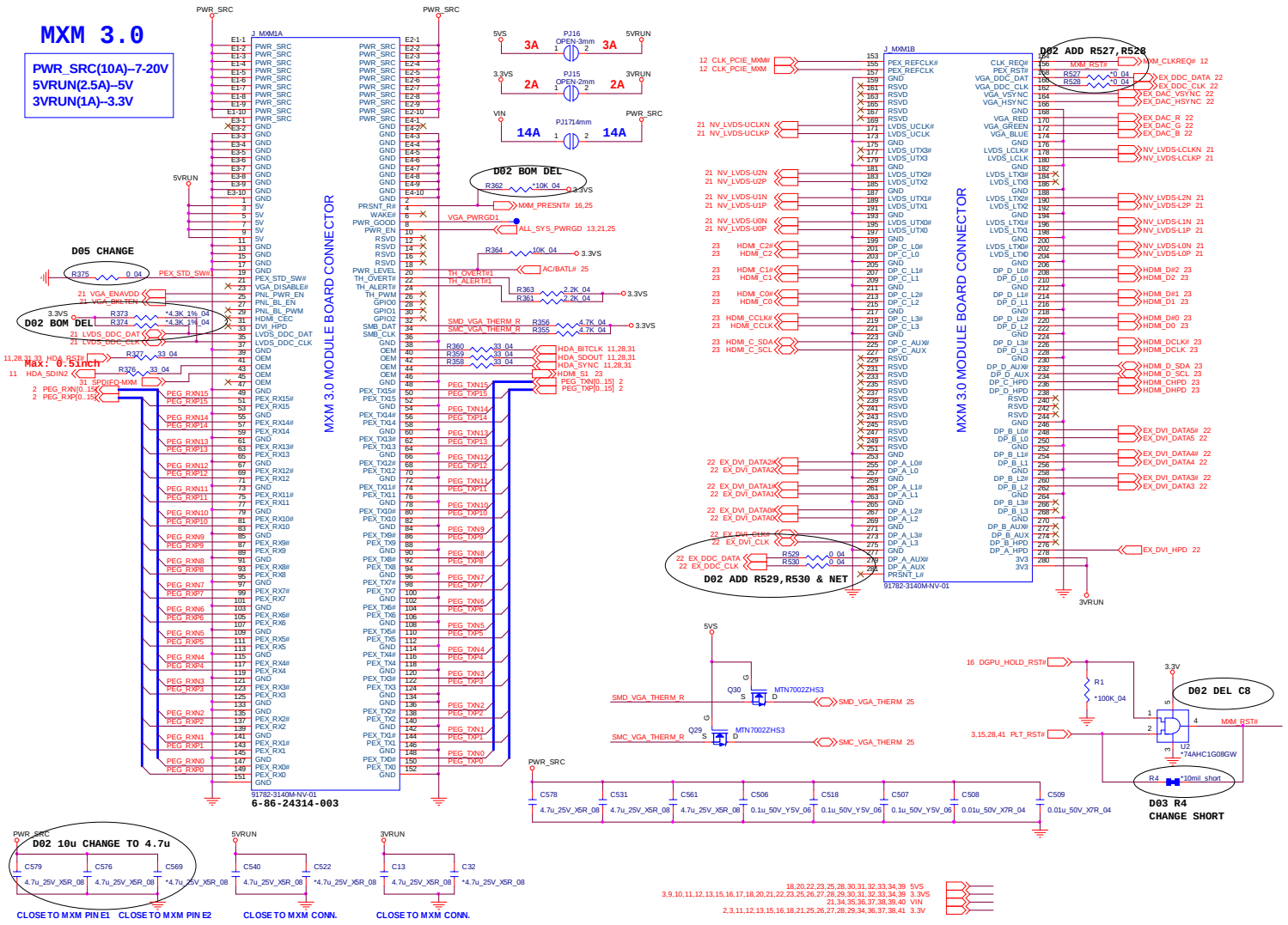
HDMI

Sheet 23 of 57
HDMI



CONTROL BITS		I/O SELECTED		HOT PLUG DETECT STATUS	
S2	S1	Y/Z	SCL_SINK SDA_SINK	HPD1	HPD2
H	H	A1/B1 Terminations of A2/B2 are disconnected	SCL1 SDA1	HPD_SINK	L
H	L	A2/B2 Terminations of A1/B1 are disconnected	SCL2 SDA2	L	HPD_SINK
L	L	Disallowed (indeterminate) State All terminations are disconnected	None (Z) Are pulled HIGH by external pull-up termination	L	L
L	H	None (Z) All terminations are disconnected		HPD_SINK	HPD_SINK

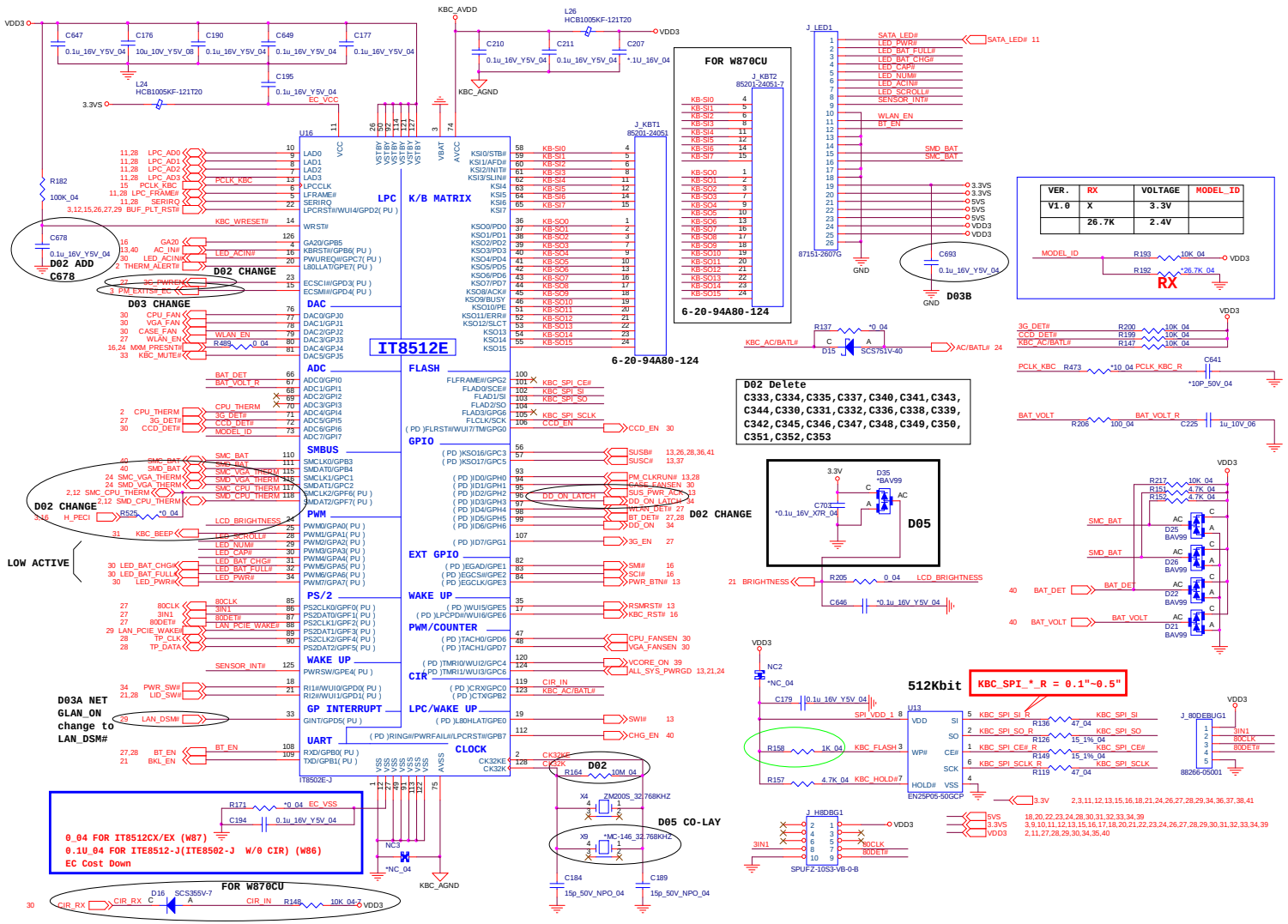
MXM PCI-E



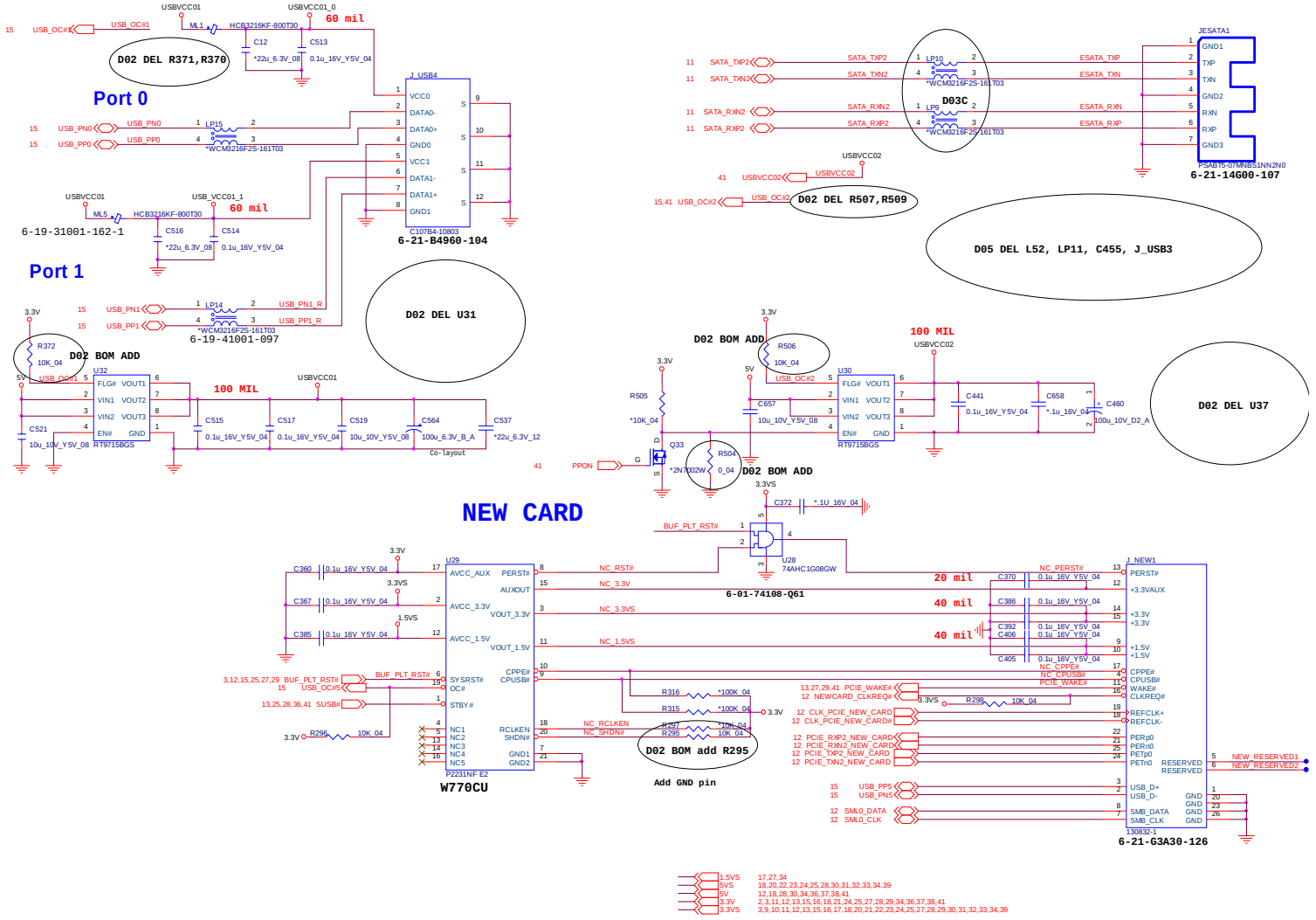
Sheet 24 of 57
MXM PCI-E

EC-IT8502E

Sheet 25 of 57
EC-IT8502E



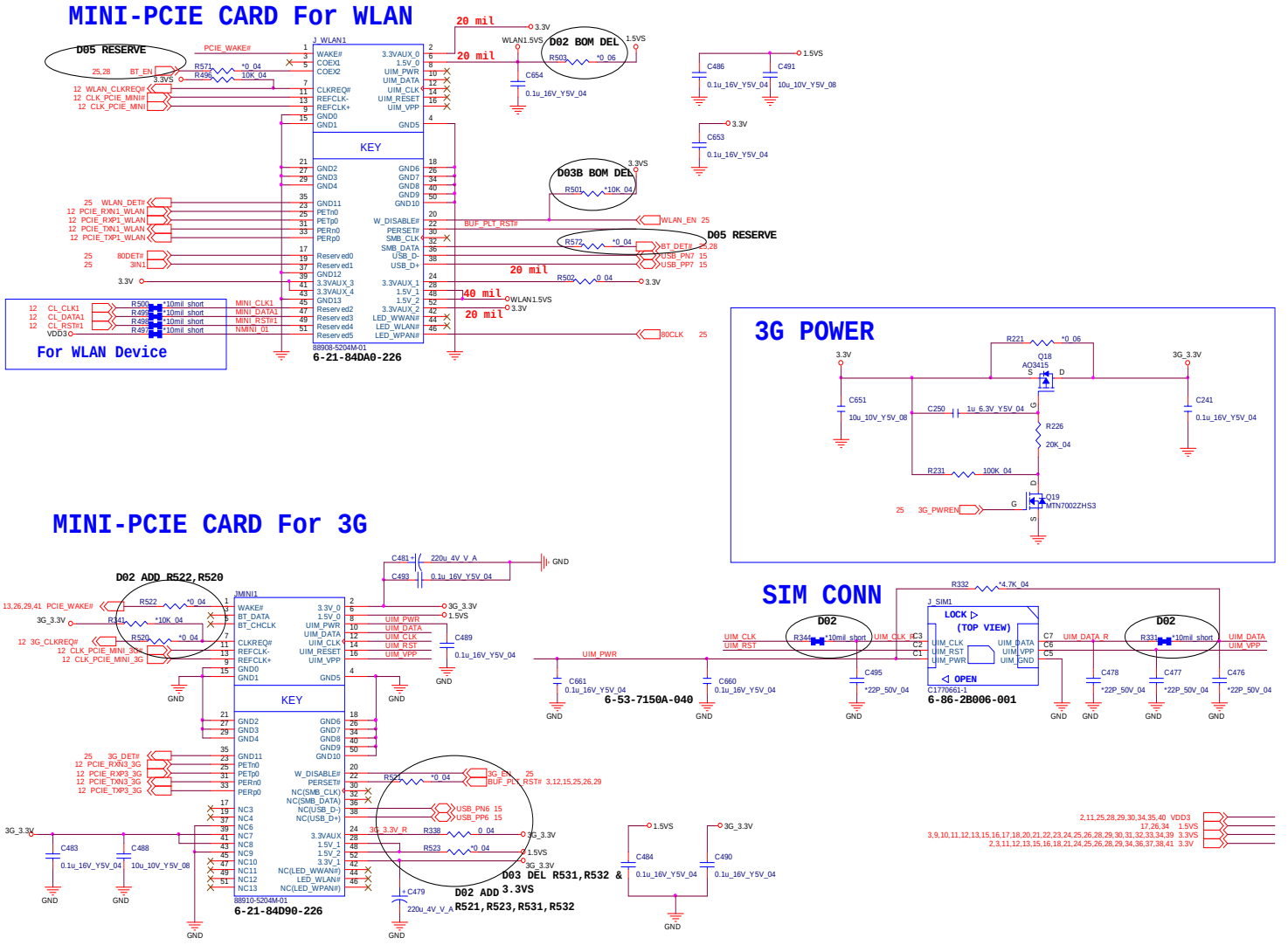
USB, eSATA, New Card



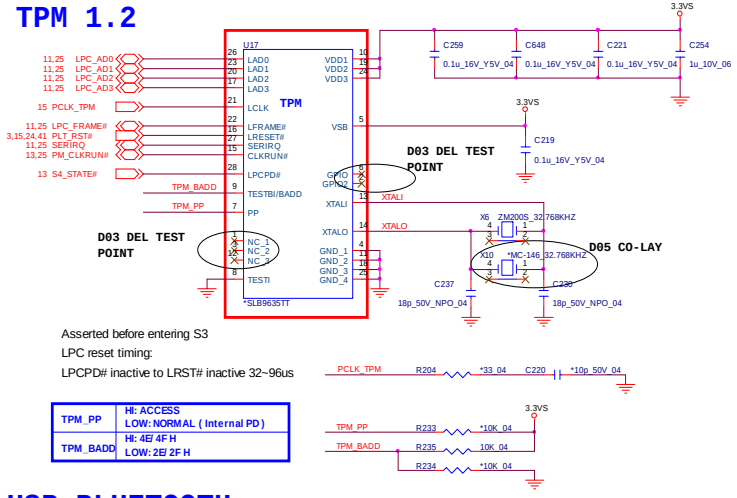
Sheet 26 of 57
USB, eSATA,
New Card

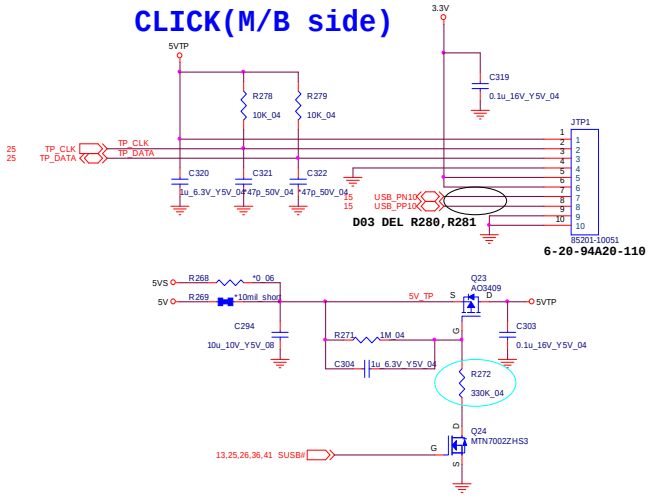
Mini Card

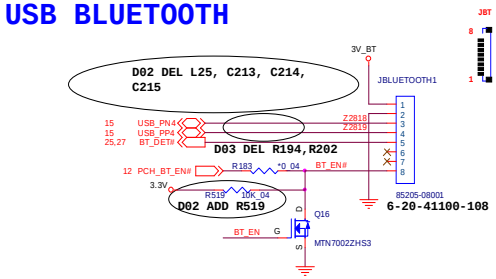
Sheet 27 of 57
Mini Card

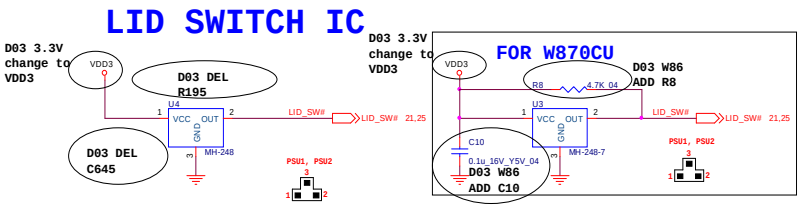


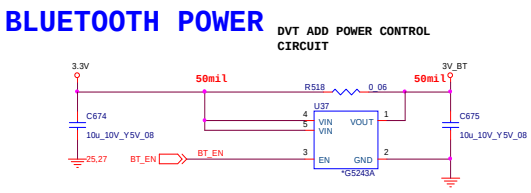
BT, TPM, MDC, LID

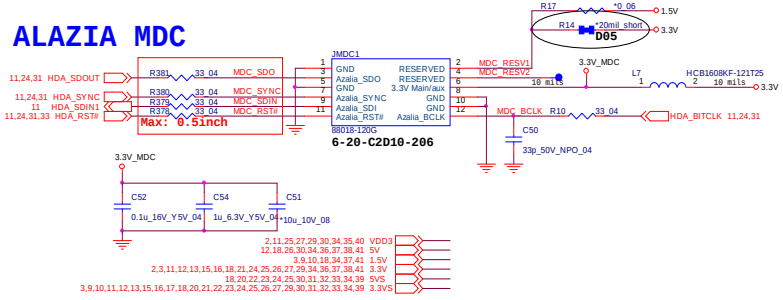












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BT, TPM, MDC, LID

LAN, RTL8111DL, RJ45

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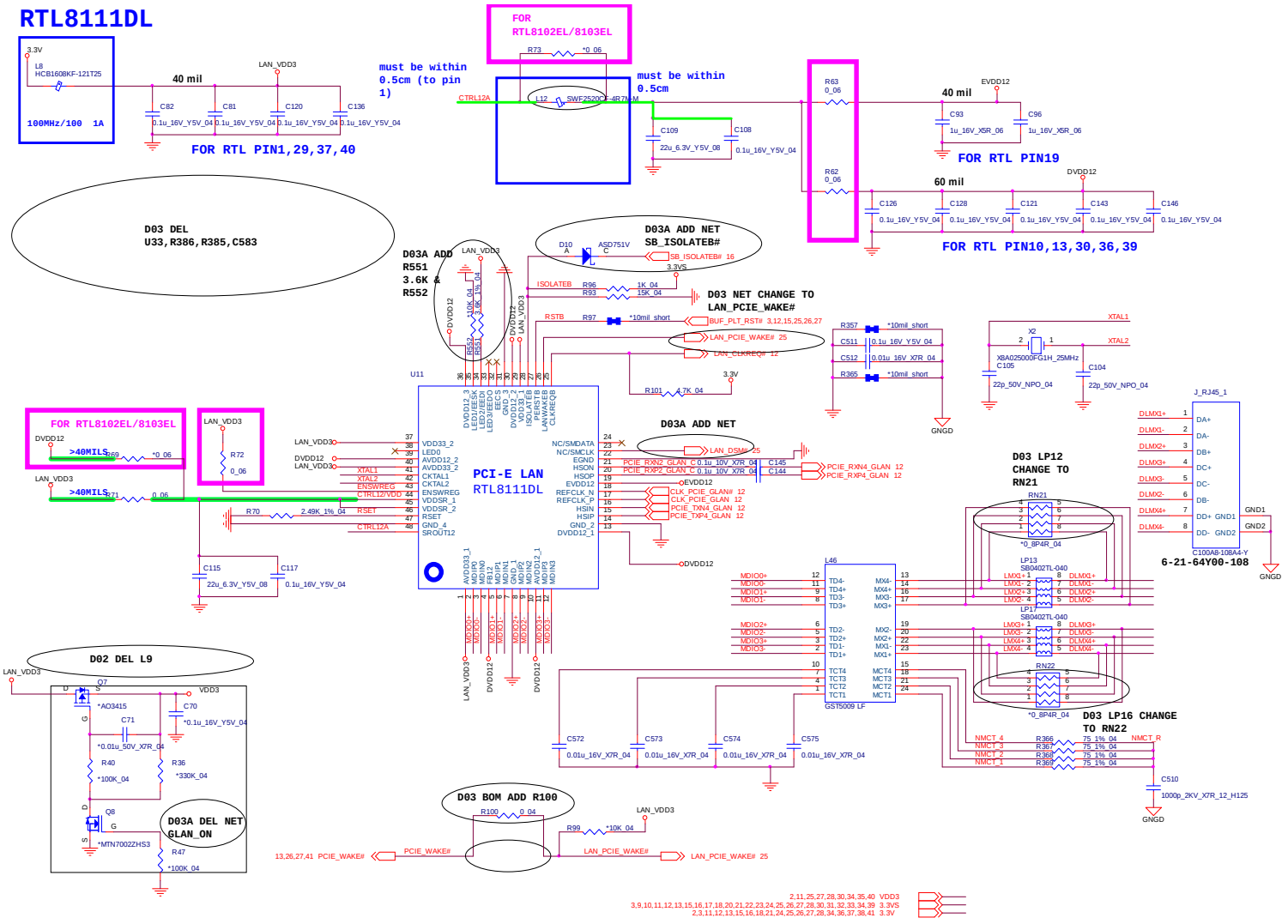
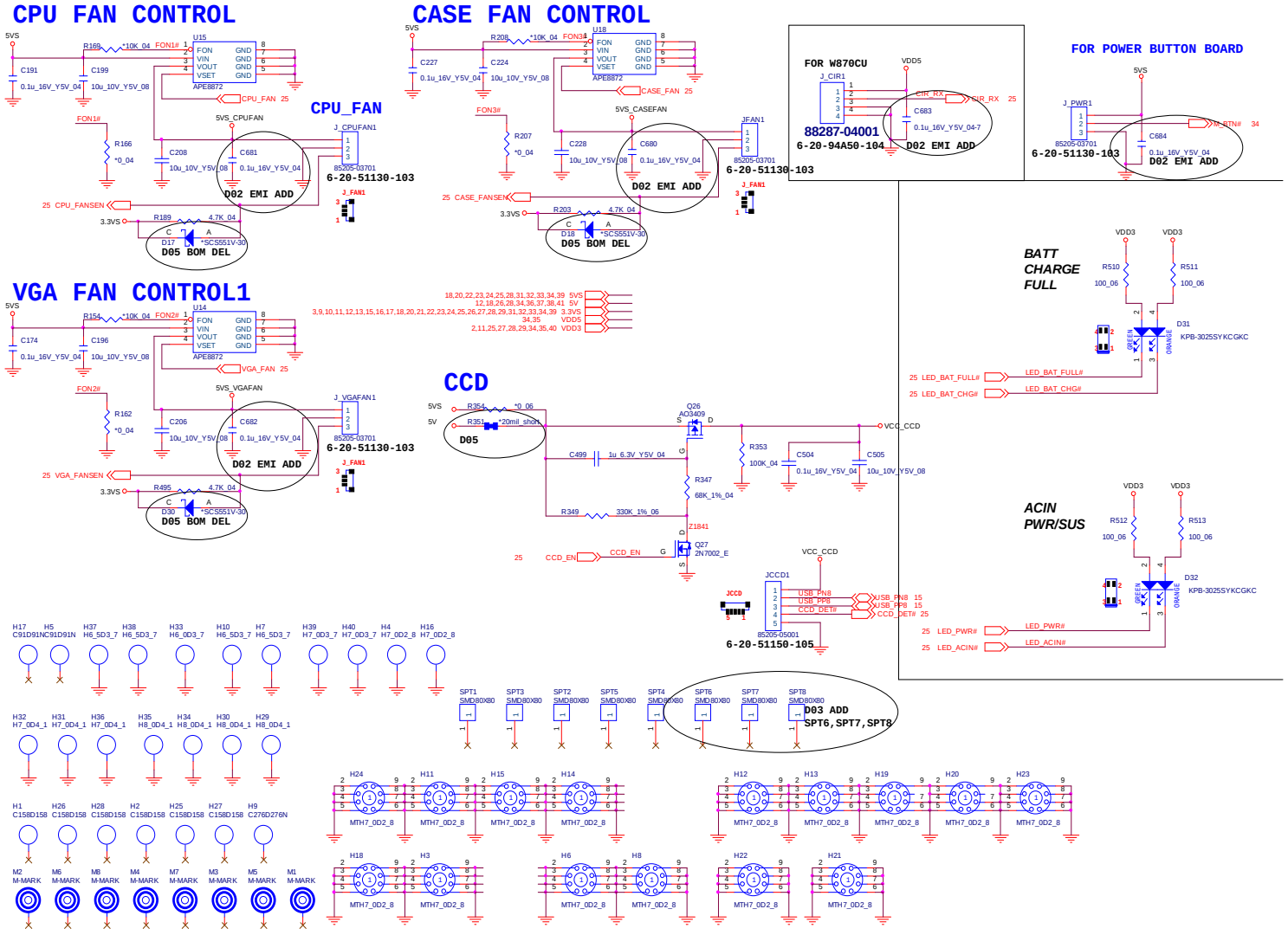
LAN-RTL8111DL, RJ45



Fan, CCD, LED, Screw Hole

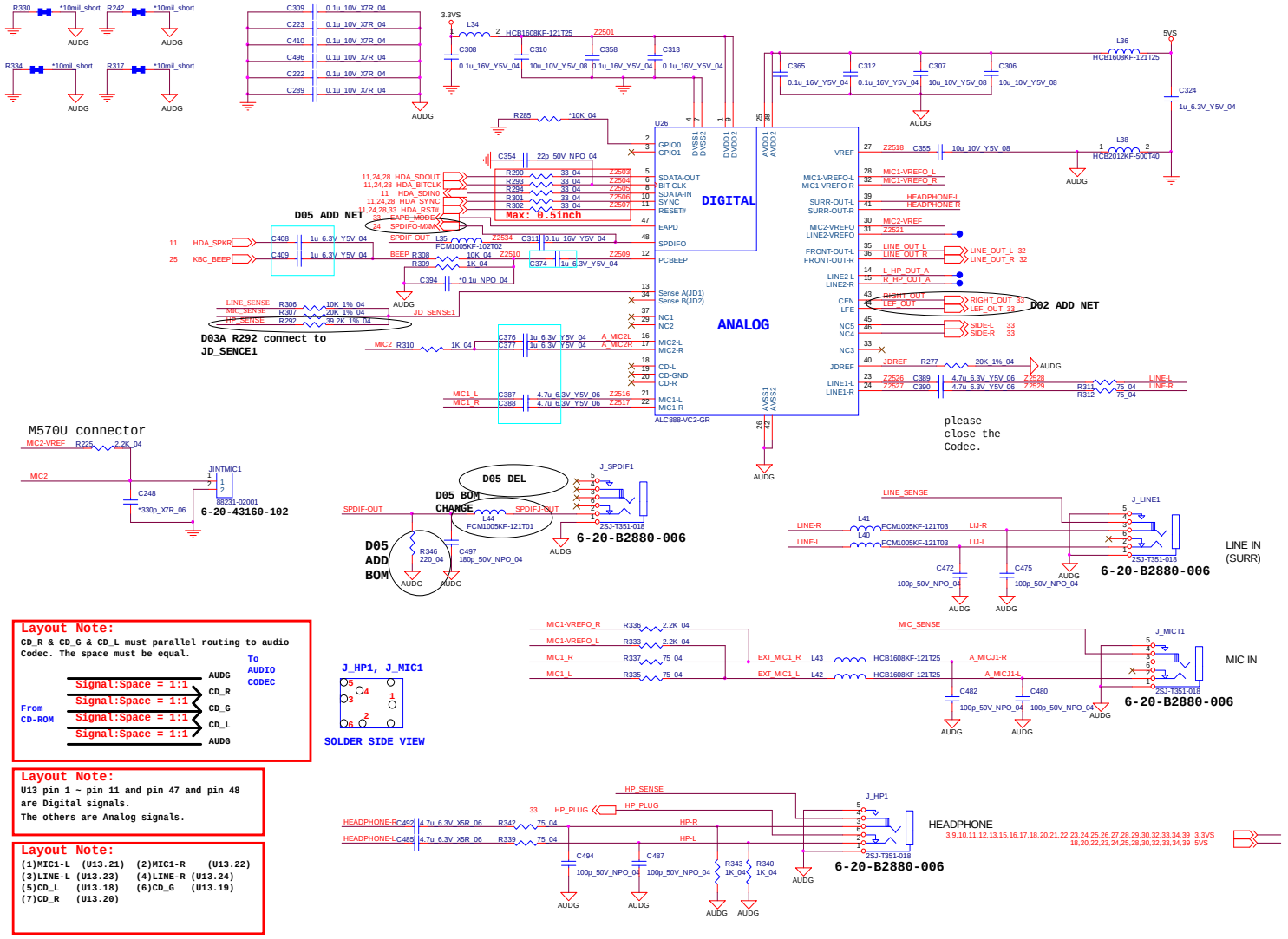


Sheet 30 of 57
Fan, CCD, LED, Screw Hole

B.Schematic Diagrams

Azalia Codec ALC888

Sheet 31 of 57
Azalia Codec
ALC888



SRS-AP8202, SATA ODD & HDD

D05 DEL SRS CIRCUIT

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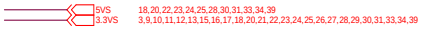
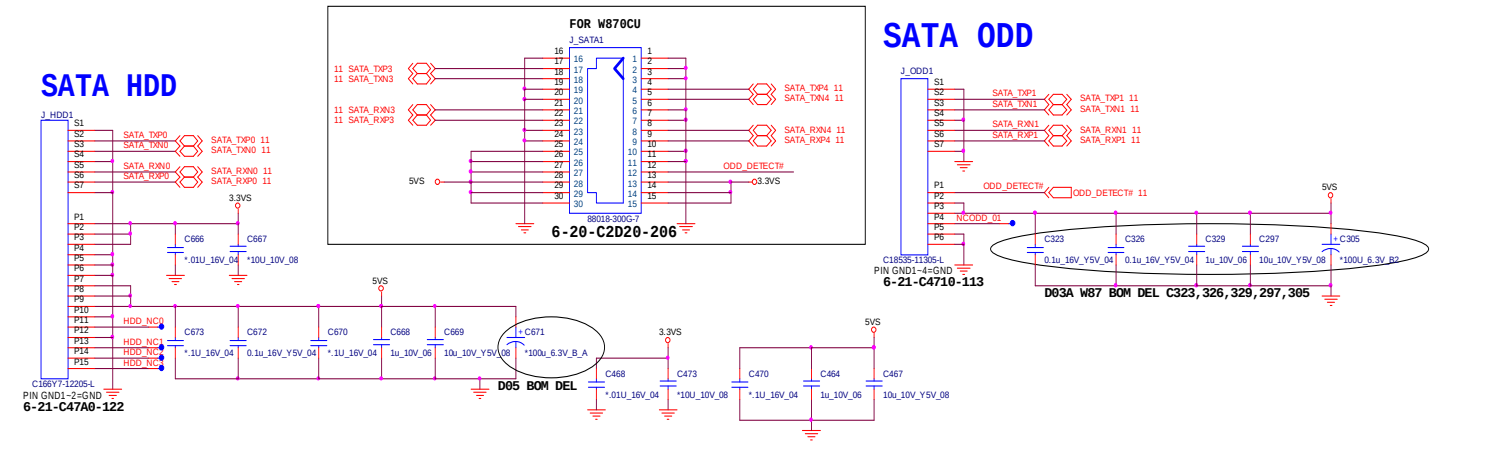
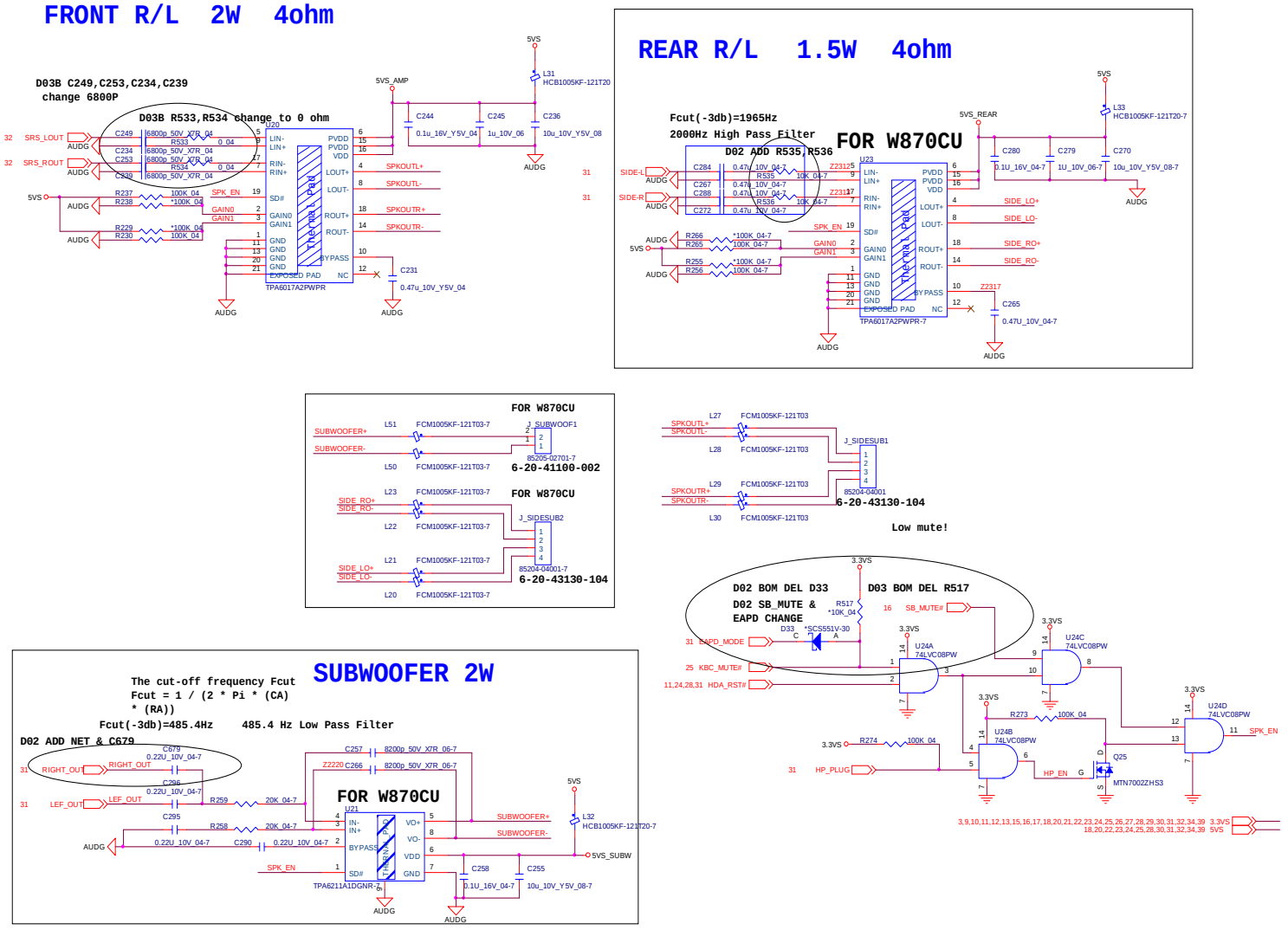
SRS-AP8202,
SATA ODD & HDD



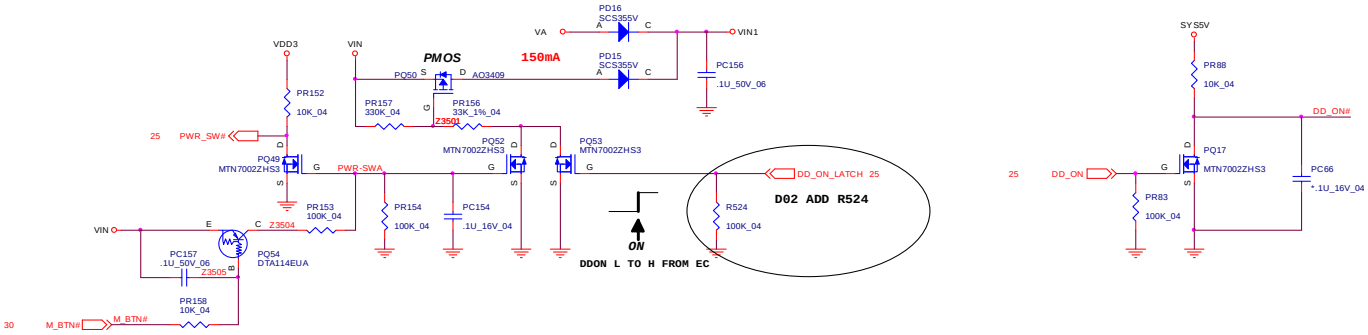


AMP-TPA6017, Subwoofer

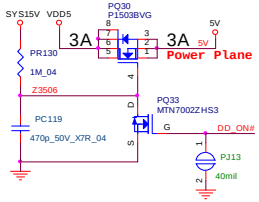
Sheet 33 of 57
AMP-TPA6017, Subwoofer



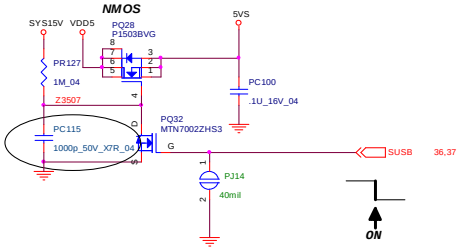
5V, 3.3V, 3.3VS, 5VS, 1.5VS



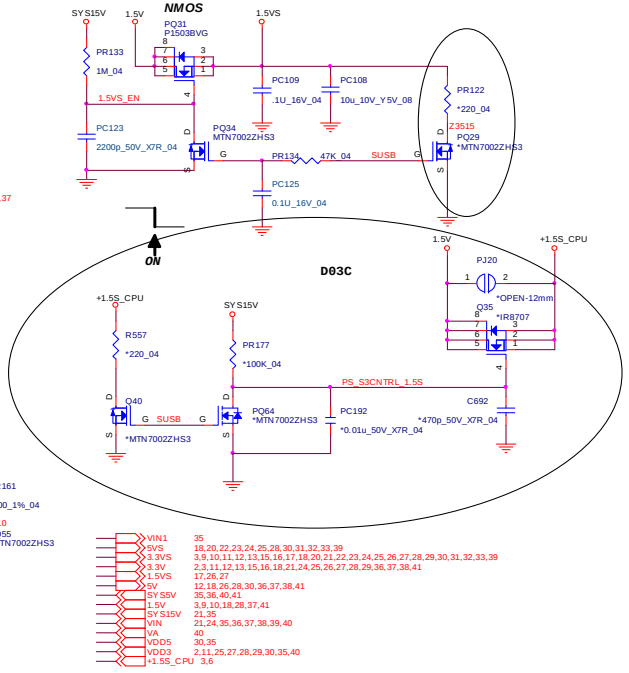
5V



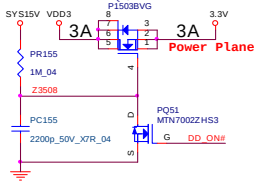
5VS



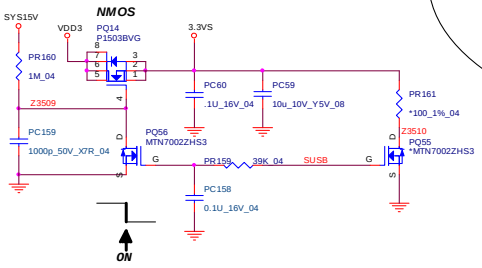
1.5VS



3.3V



3.3VS

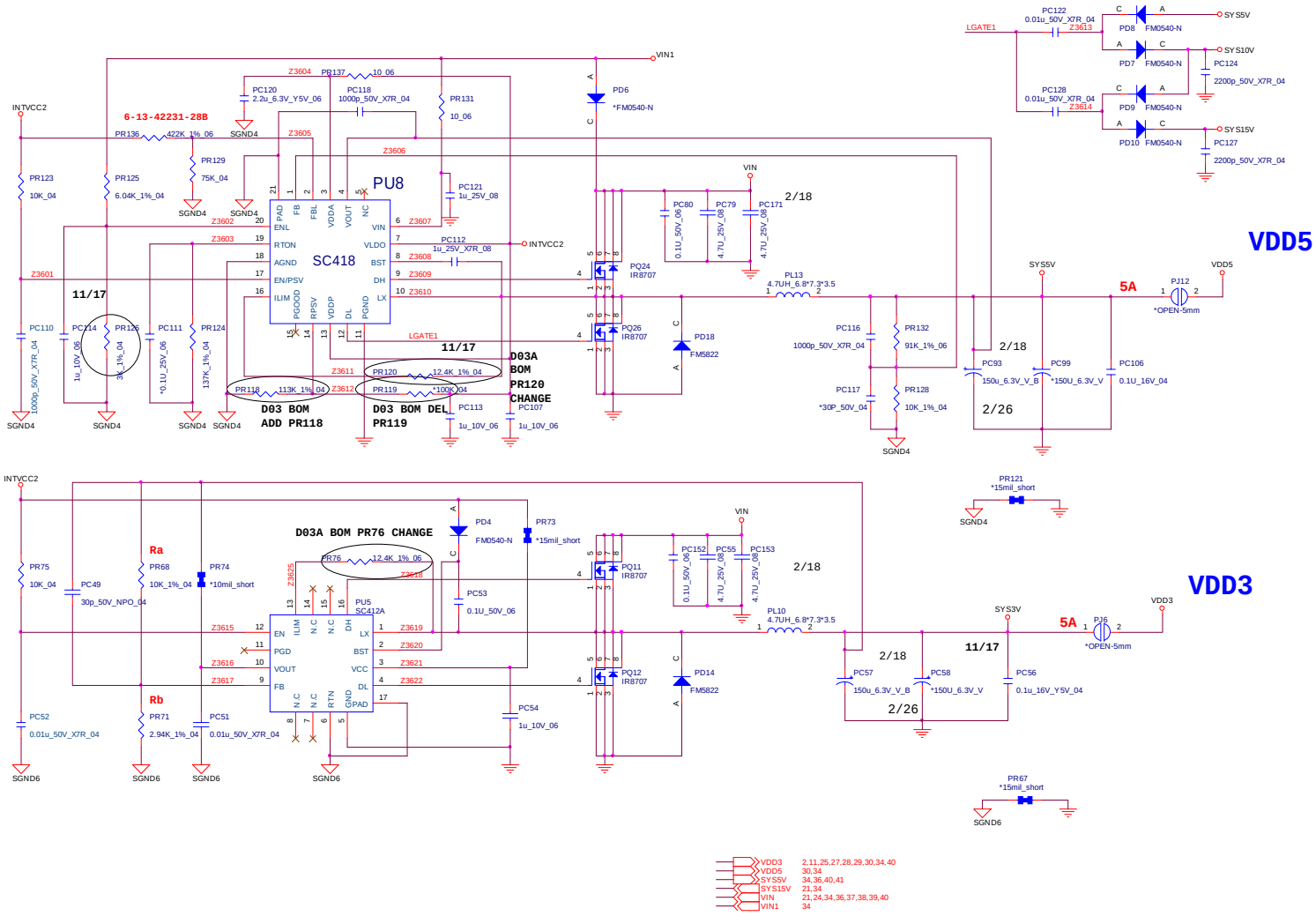


VIN1	35
5VS	18,20,22,23,24,25,28,30,31,32,33,39
3.3VS	3,9,10,11,12,13,15,16,17,18,20,21,22,23,24,25,26,27,28,29,30,31,32,33,39
3.3V	2,3,11,12,13,15,16,18,21,24,25,26,27,28,29,36,37,38,41
1.5VS	17,26,27
5V	12,18,26,28,30,36,37,38,41
SYS5V	35,36,40,41
1.5V	3,9,10,18,28,37,41
SYS15V	21,35
VIN	21,24,35,36,37,38,39,40
VA	40
VDD5	30,35
VDD3	2,11,25,27,28,29,30,35,40
+1.5S_CPU	3,6

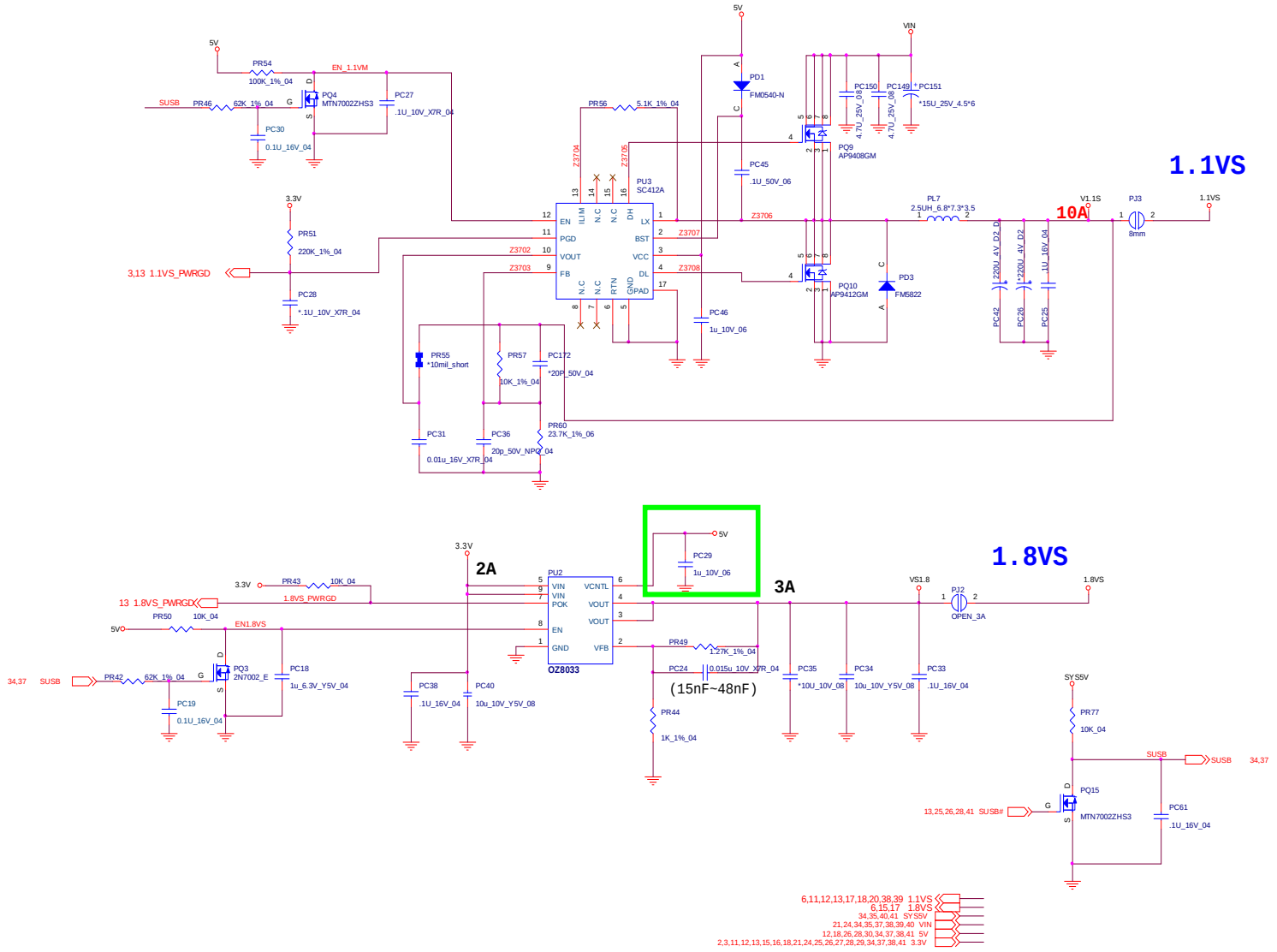
Sheet 34 of 57
5V, 3.3V, 3.3VS, 5VS, 1.5VS

VDD3, VDD5

Sheet 35 of 57
VDD3, VDD5



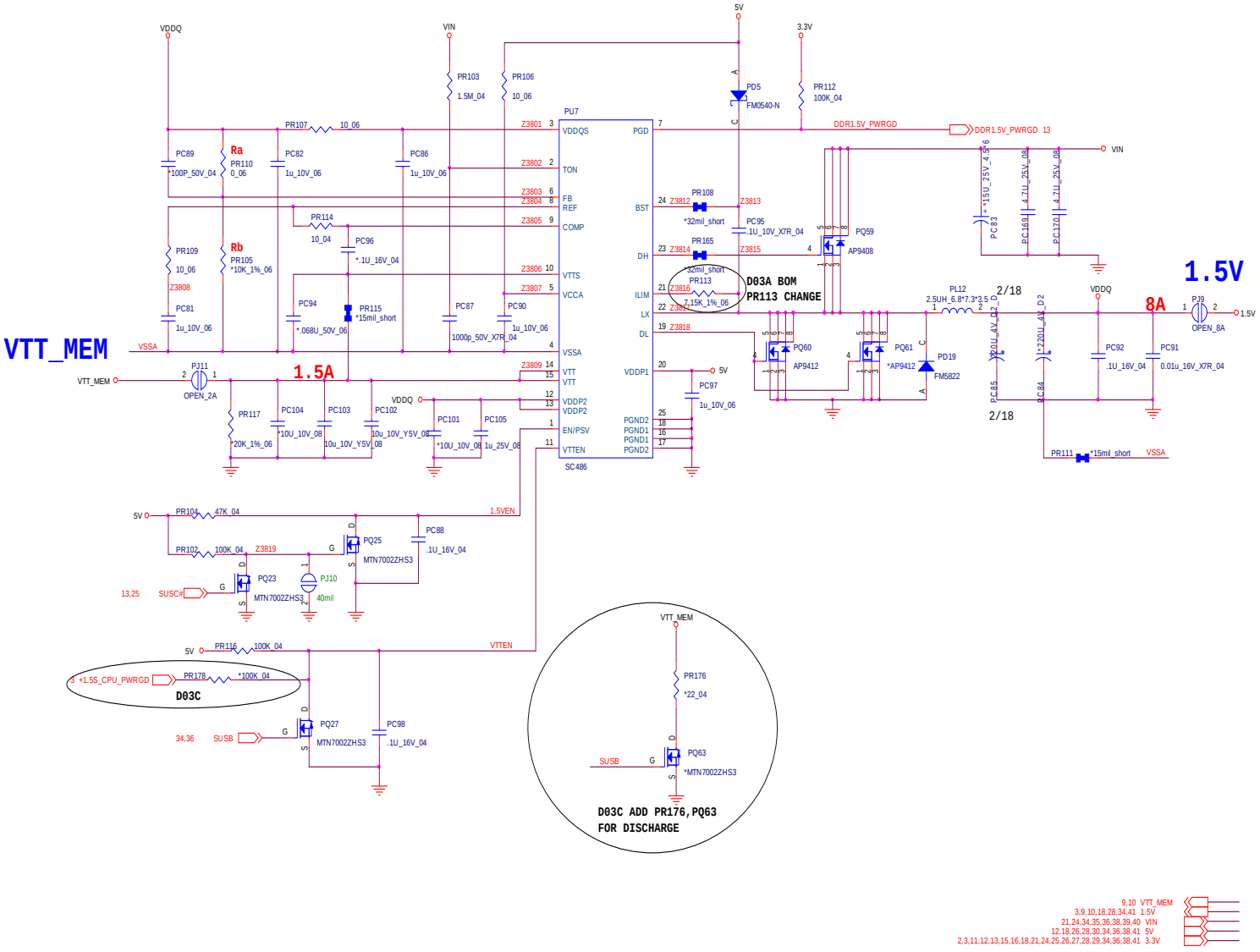
Power 1.8VS, 1.1VS



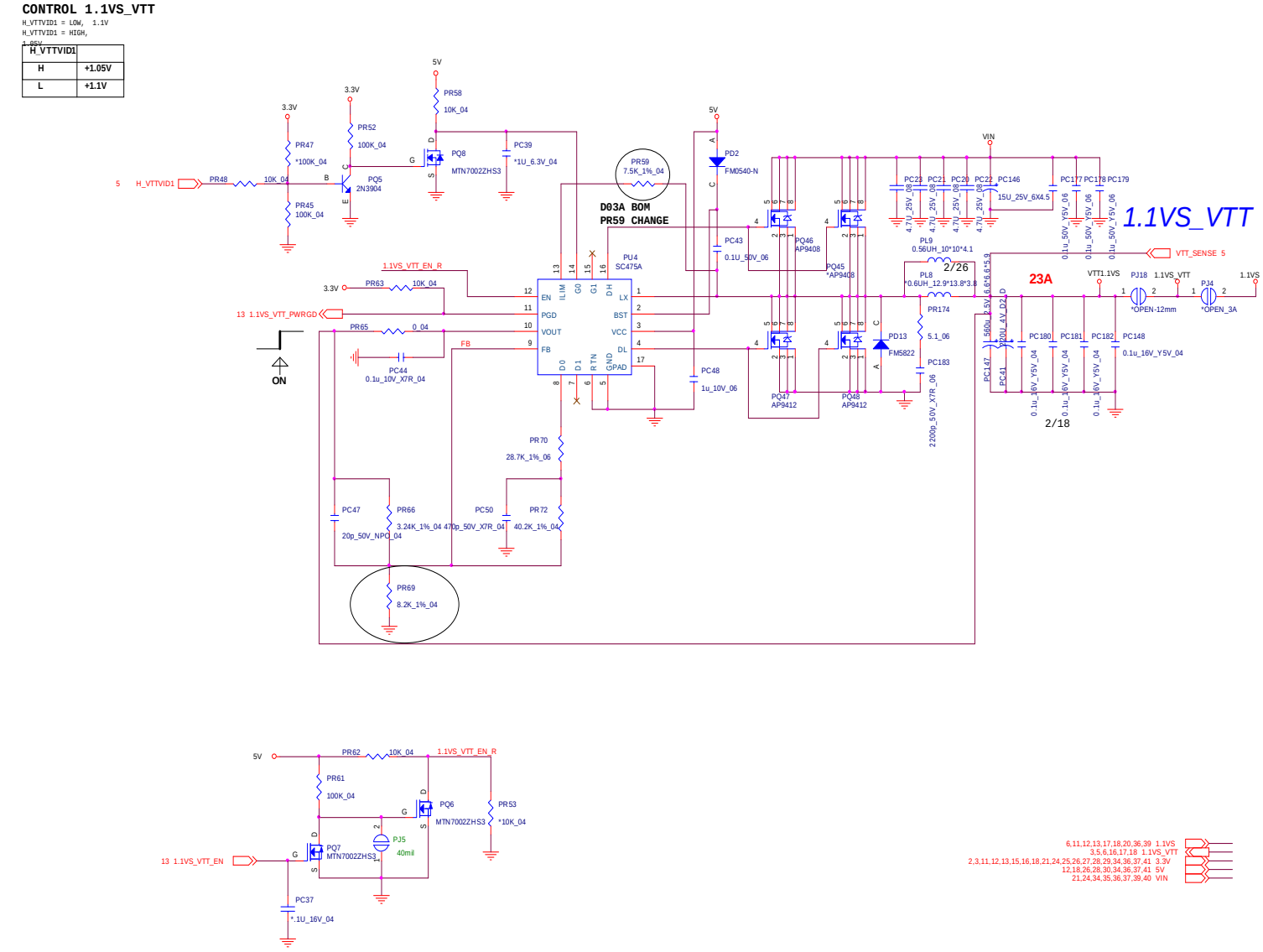
Sheet 36 of 57
Power 1.8VS, 1.1VS

Power 1.5V/0.75V

Sheet 37 of 57
Power 1.5V/0.75V



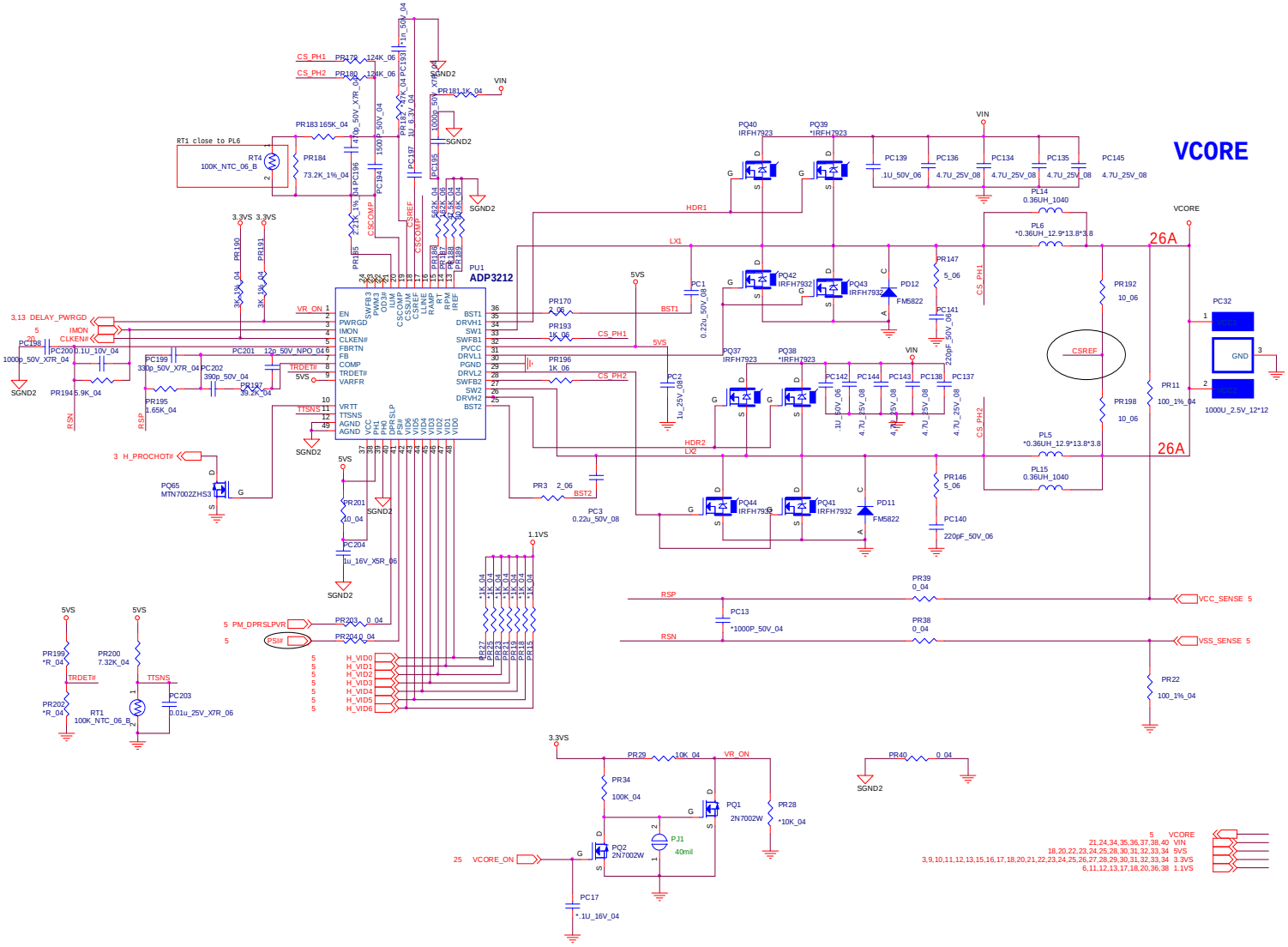
Power 1.1VS_VTT



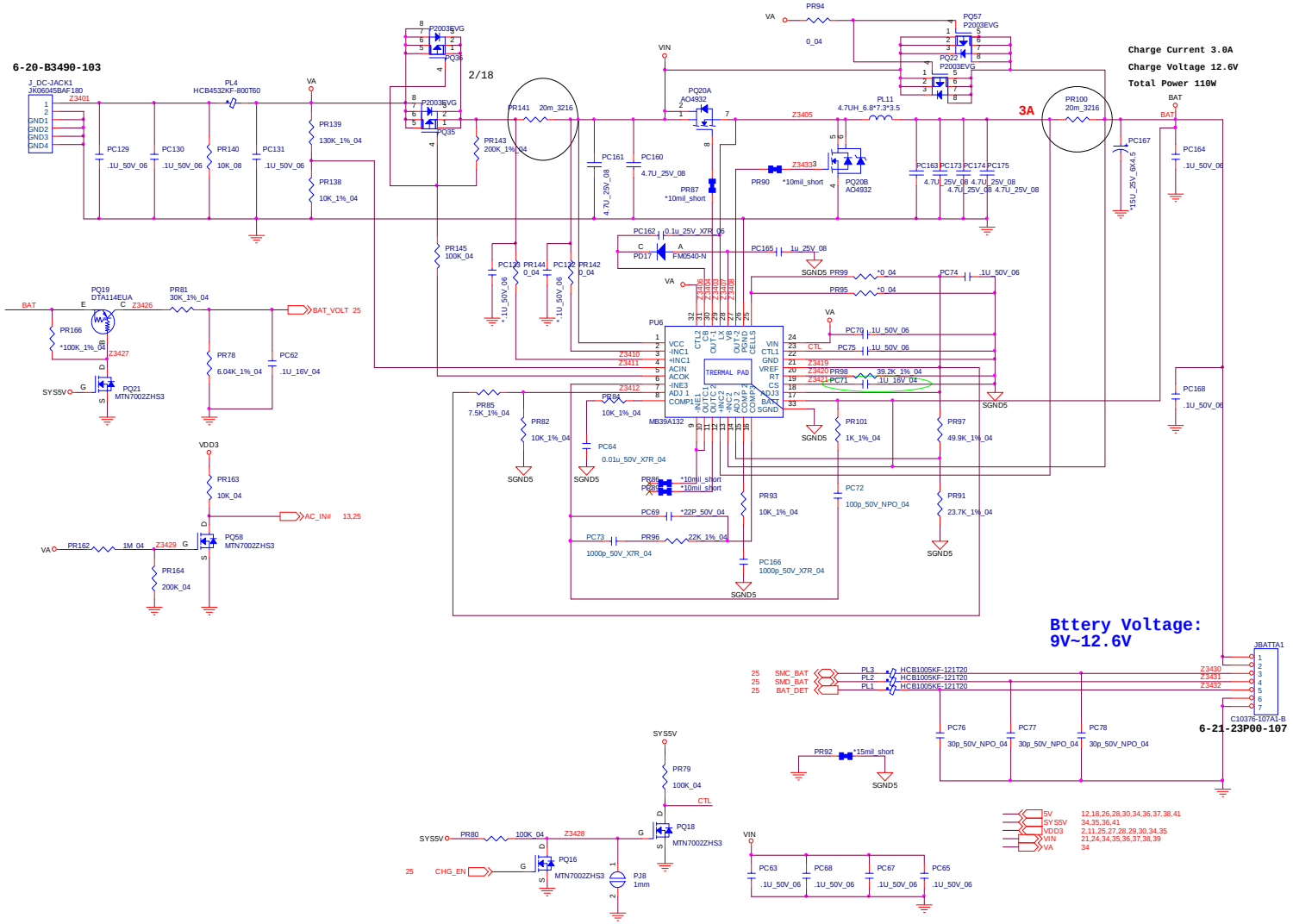
Sheet 38 of 57
Power 1.1VS_VTT

Power VCore

Sheet 39 of 57
Power VCore



AC_IN, Charger



USB 3.0

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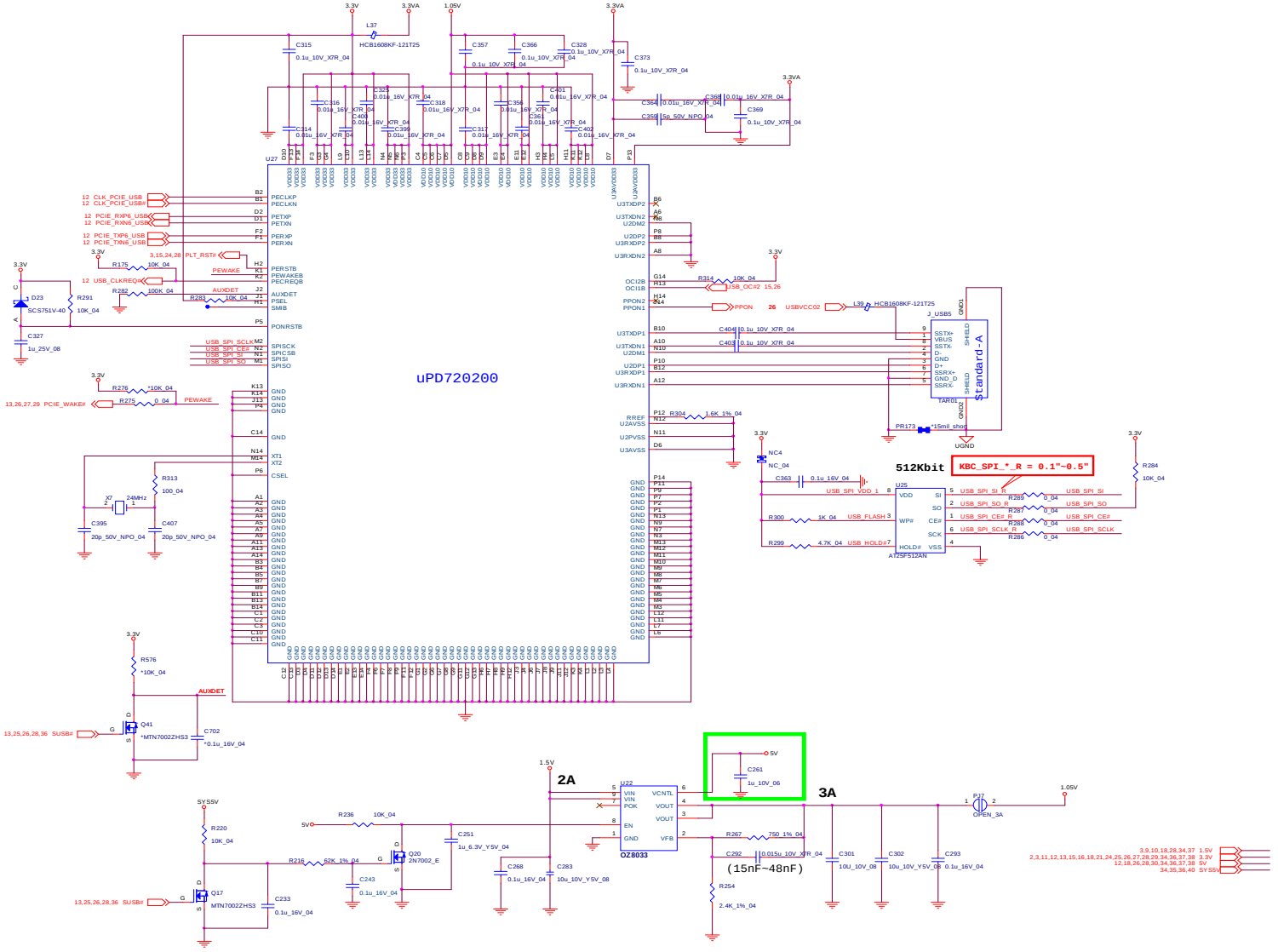
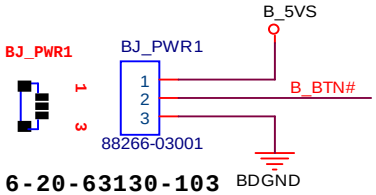
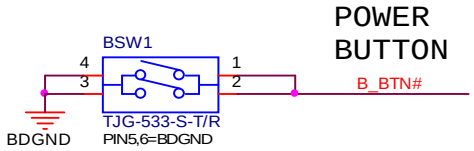
USB 3.0

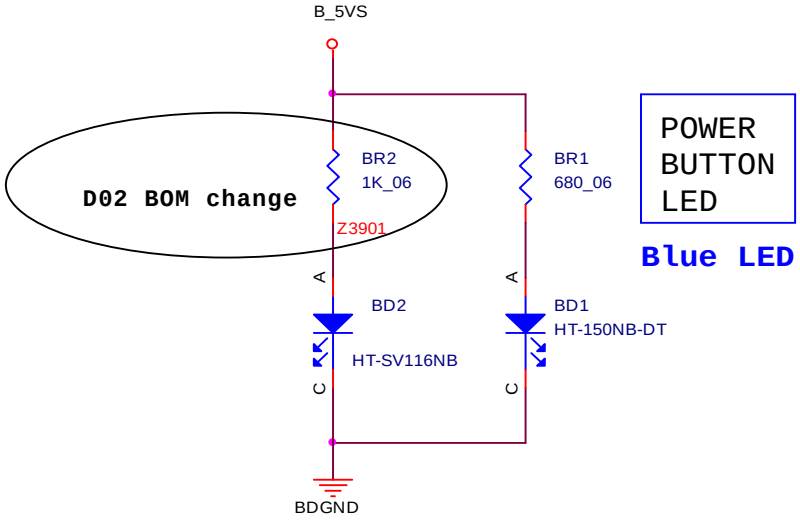


Power Button Board

FOR POWER SWITCH BOARD







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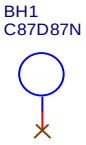
Power Button Board



LED Board

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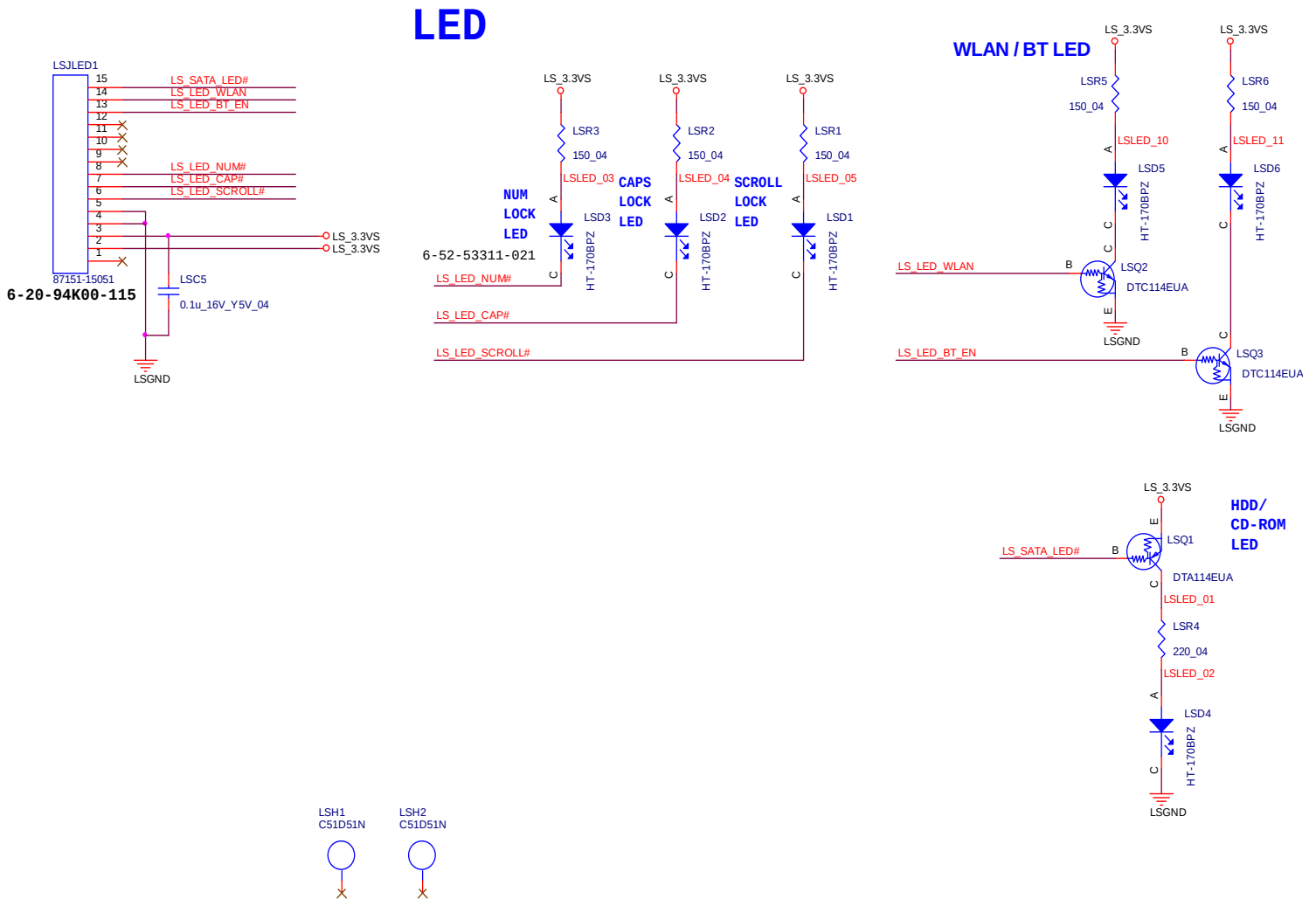
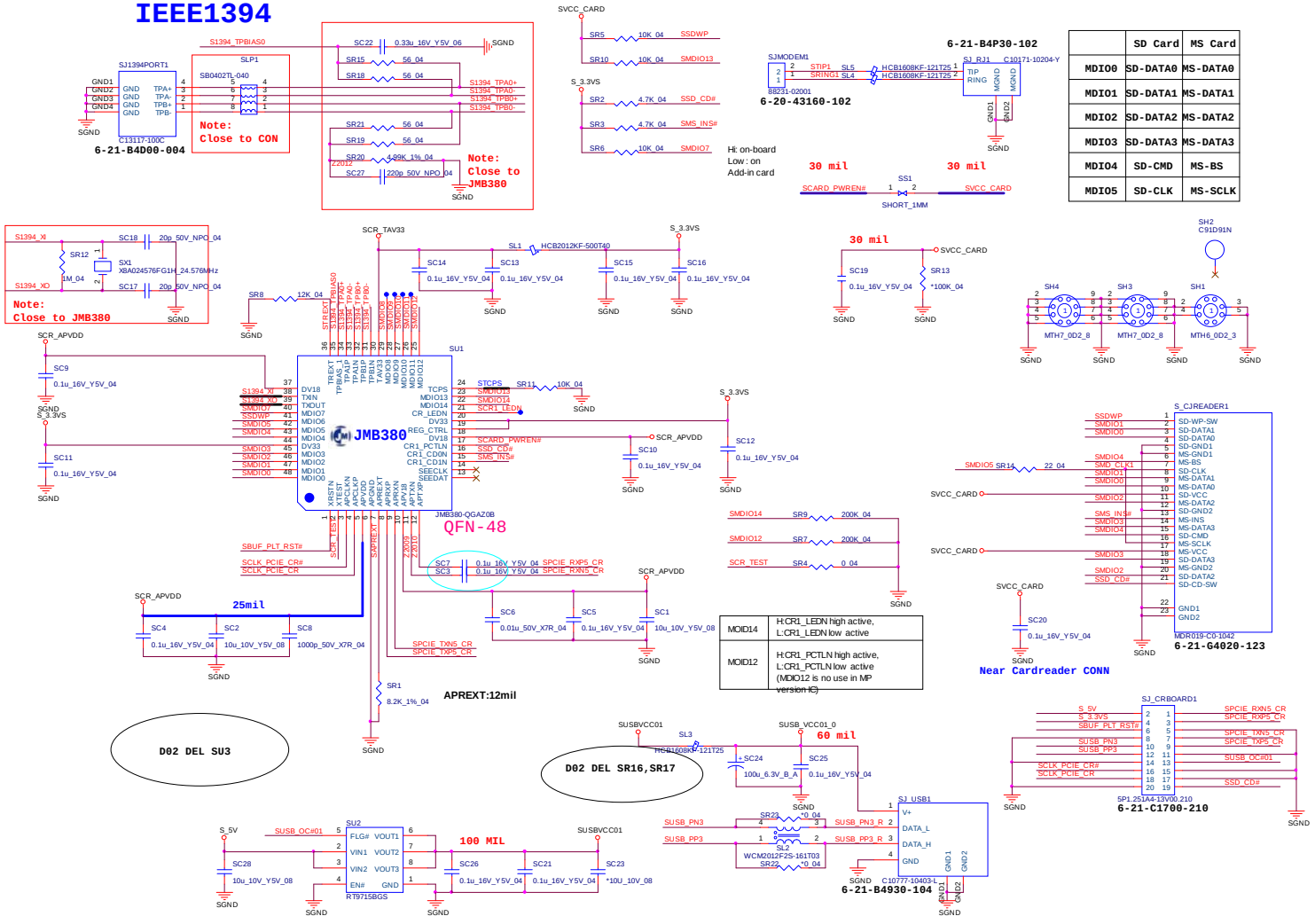
LED Board



Multi I/O Board



	SD Card	MS Card
MDIO0	SD-DATA0	MS-DATA0
MDIO1	SD-DATA1	MS-DATA1
MDIO2	SD-DATA2	MS-DATA2
MDIO3	SD-DATA3	MS-DATA3
MDIO4	SD-CMD	MS-BS
MDIO5	SD-CLK	MS-SCLK

MDID14	H:CR1_LEDN high active, L:CR1_LEDN low active
MDID12	H:CR1_PCTLN high active, L:CR1_PCTLN low active (MDIO12 is no use in MP version IC)

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Multi I/O Board

Touch Sensor Board

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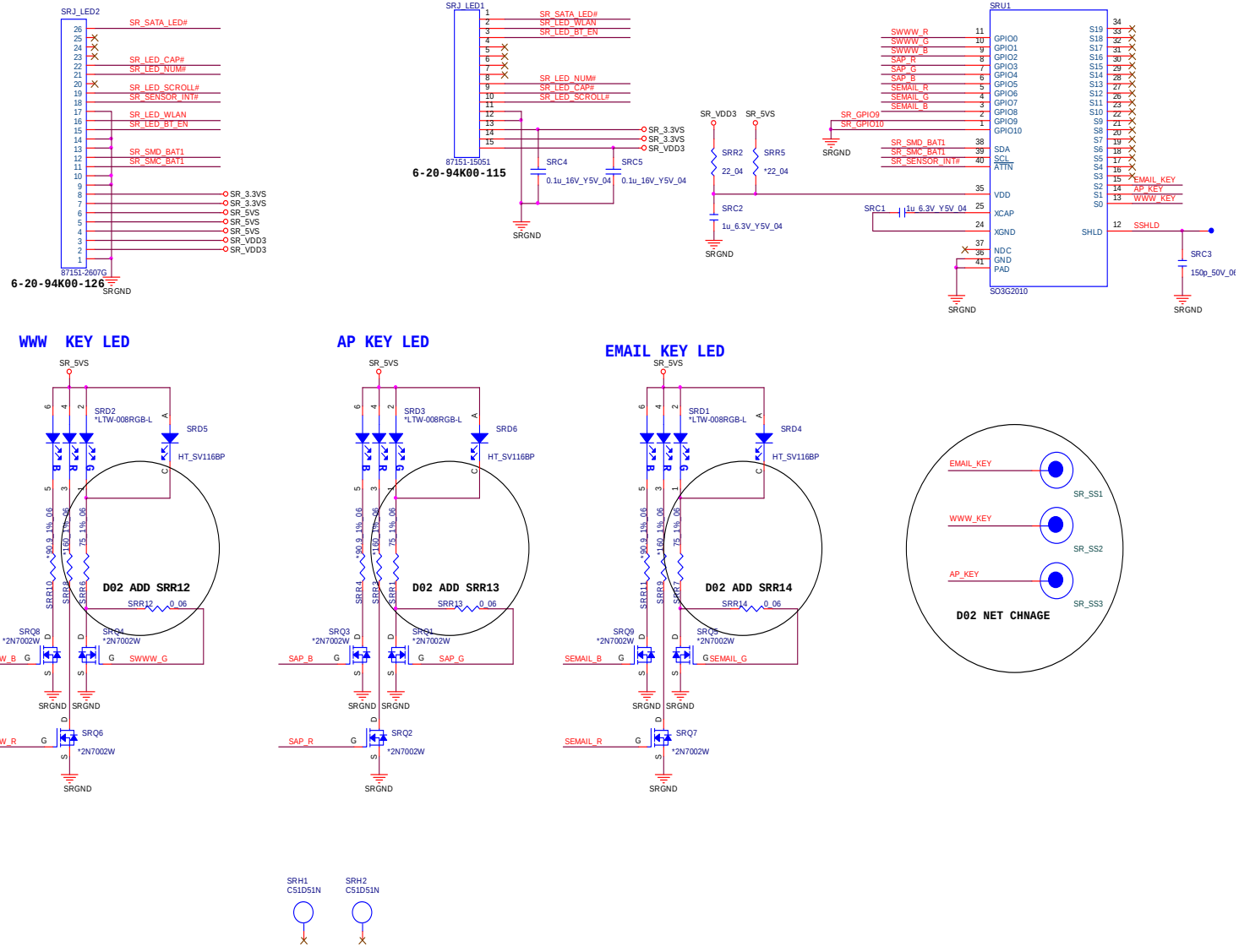
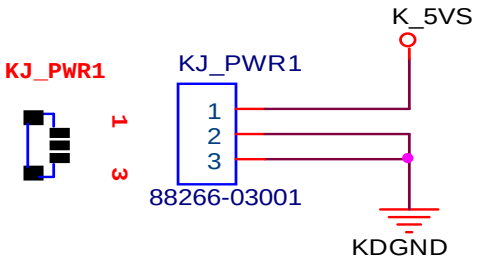
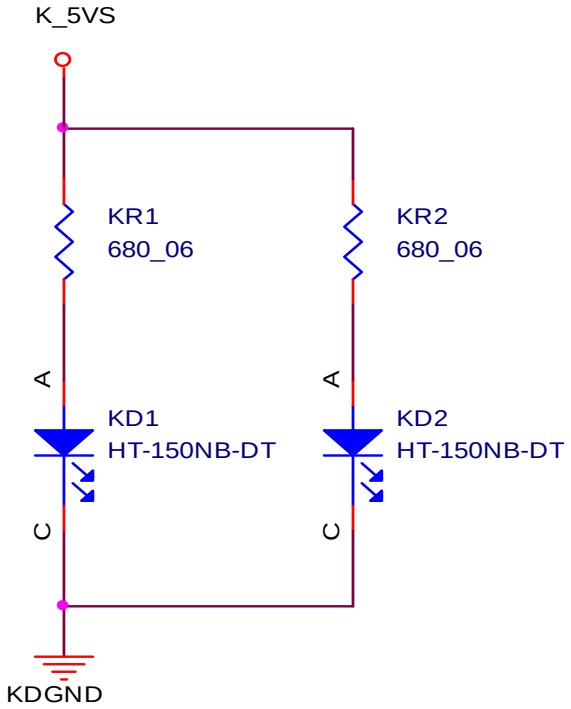
Touch Sensor Board



Left-LED Board





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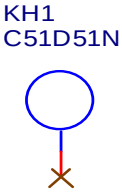
Left- LED Board



Fingerprint Board

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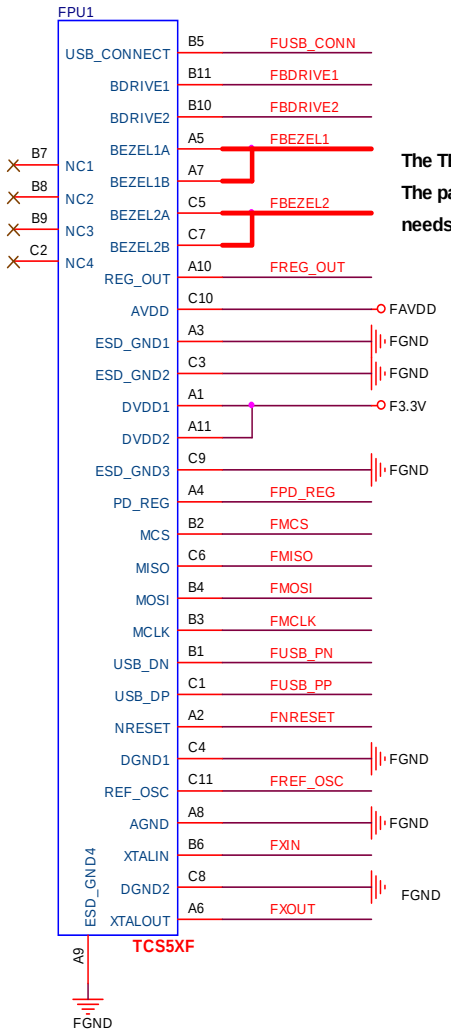
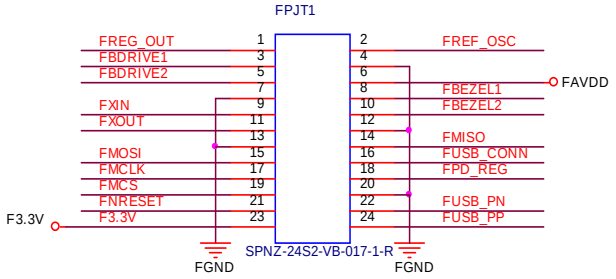
Fingerprint Board

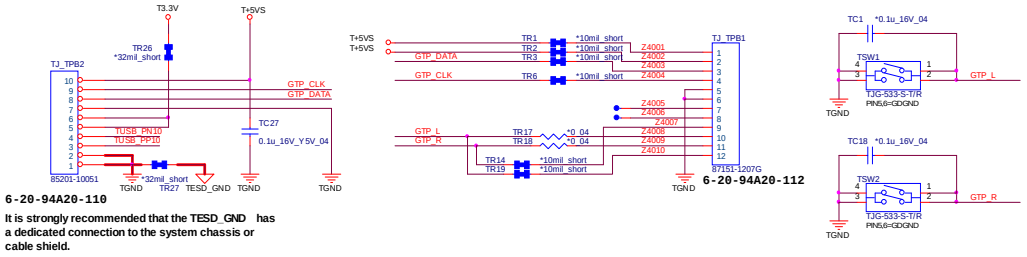


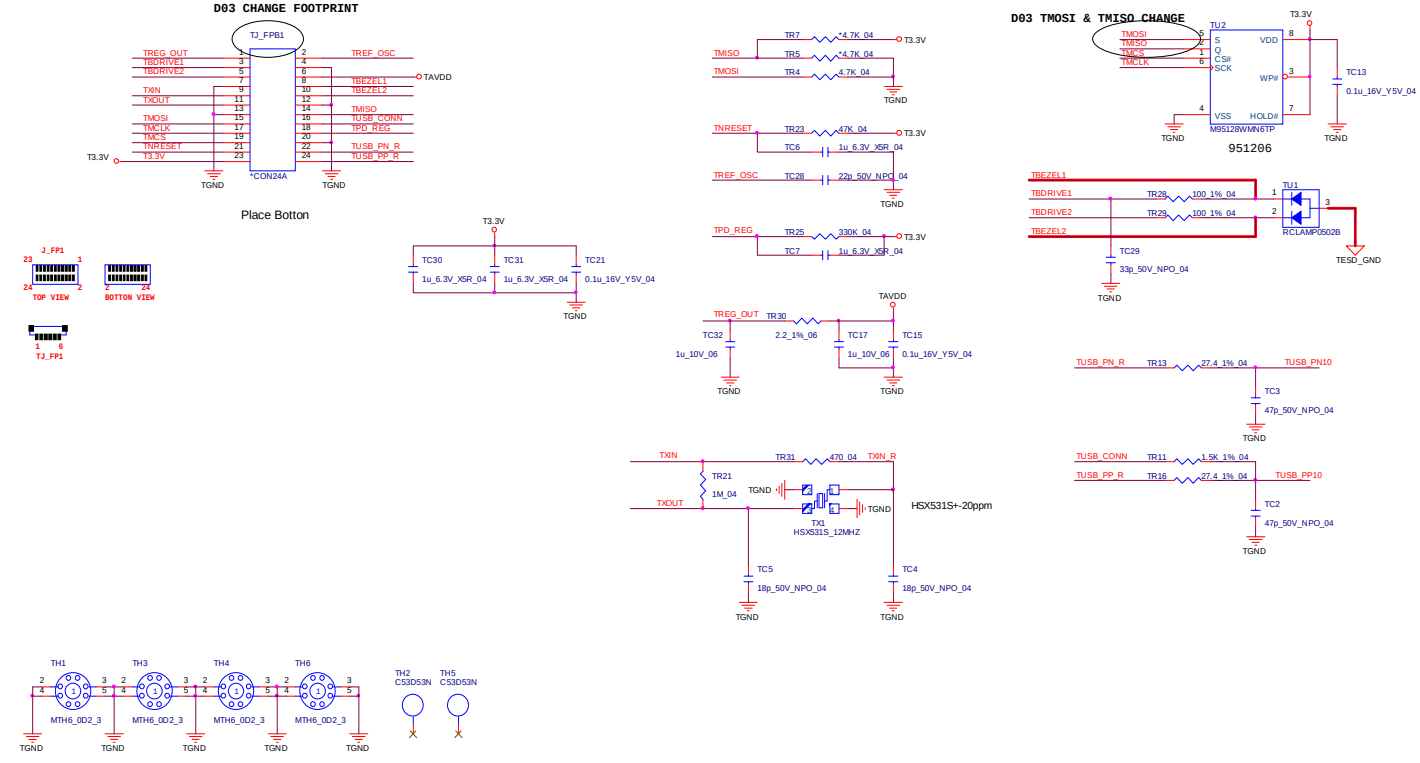
The TESD_GND trace has to be wide (> 20mil)
The path be marked in RED
needs to be design to be short and at low impedance.



6-21-41710-212

Click Board





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Click Board

W870CU Second HDD Board

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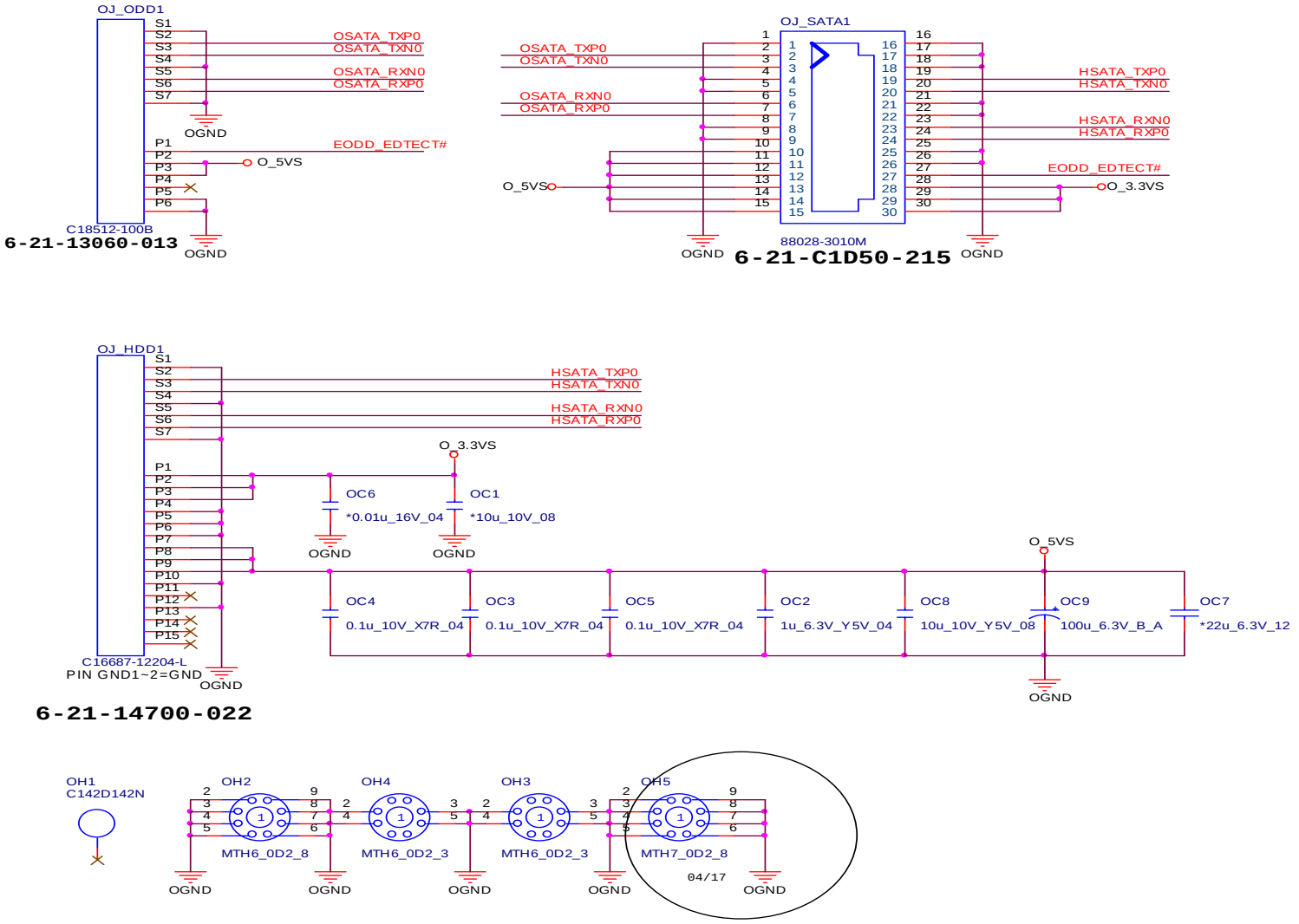
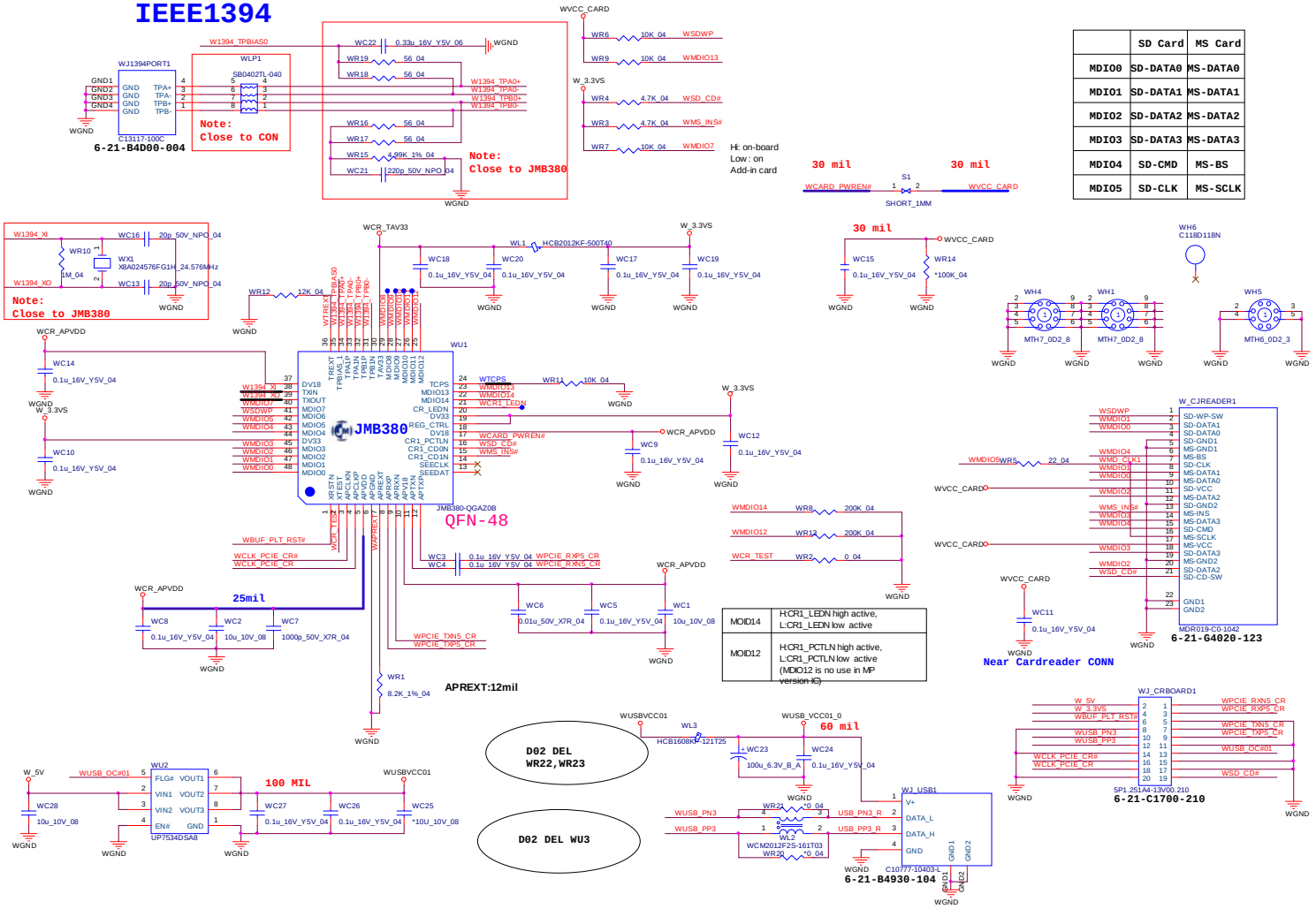
W870CU Second
HDD Board



W870CU Multi I/O Board



	SD Card	MS Card
MDIO0	SD-DATA0	MS-DATA0
MDIO1	SD-DATA1	MS-DATA1
MDIO2	SD-DATA2	MS-DATA2
MDIO3	SD-DATA3	MS-DATA3
MDIO4	SD-CMD	MS-BS
MDIO5	SD-CLK	MS-SCLK

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W870CU Multi I/O Board

W870CU CIR Board

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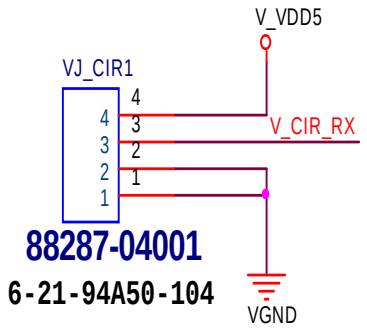
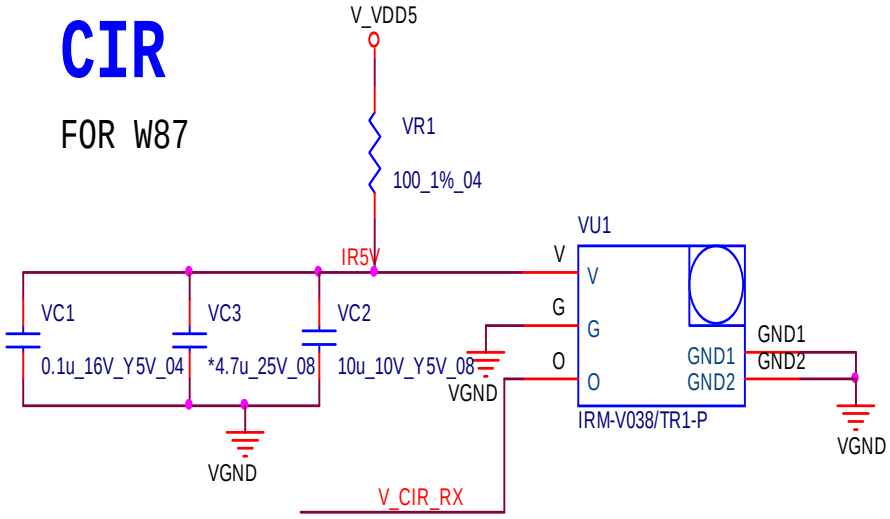
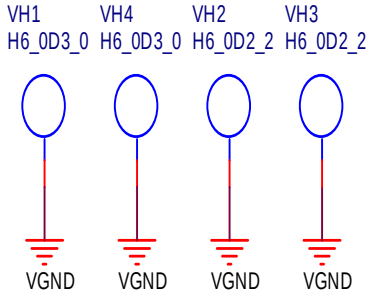
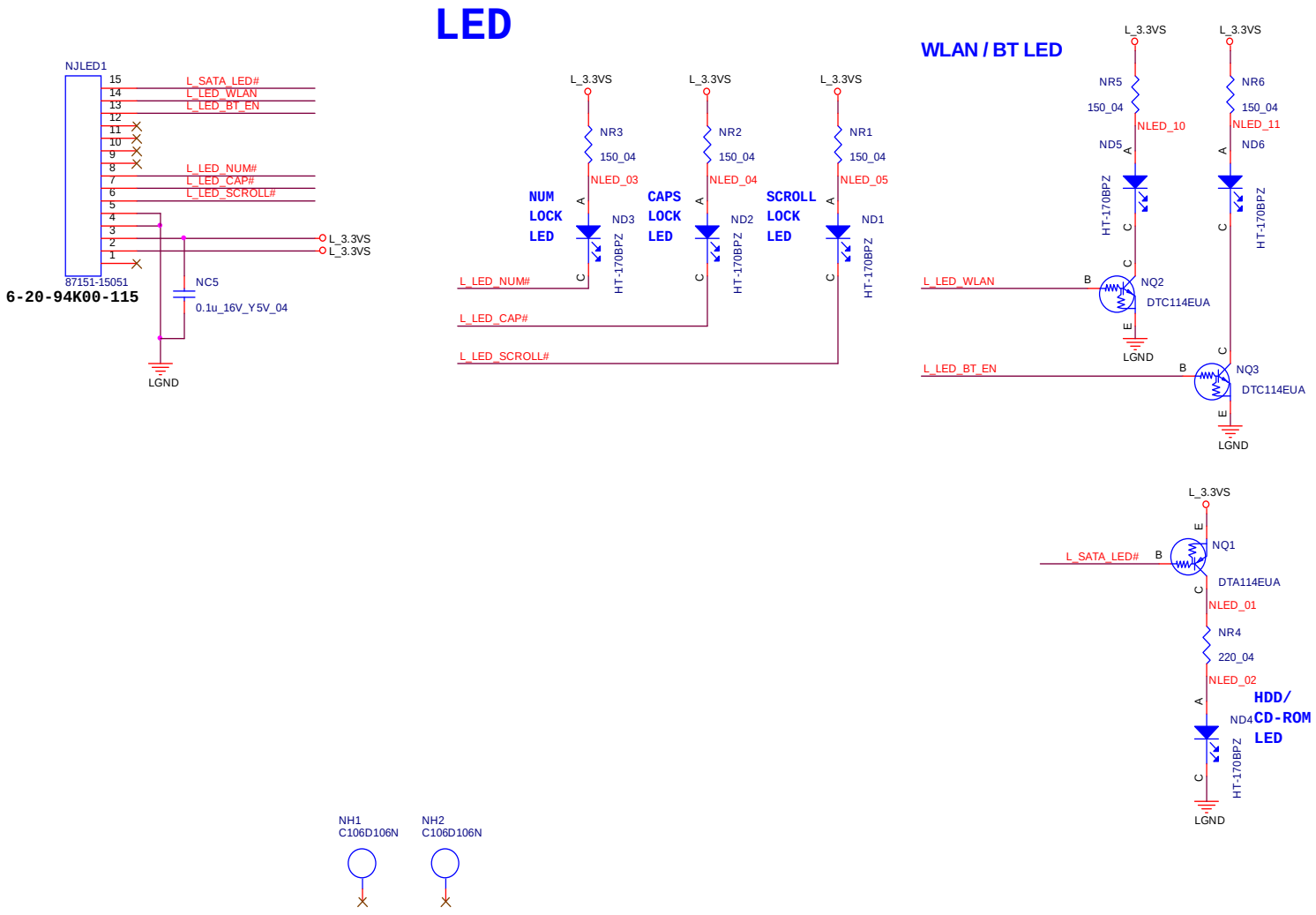
W870CU CIR Board







W870CU LED Board



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W870CU LED Board

W870CU RJ11 & TV Board

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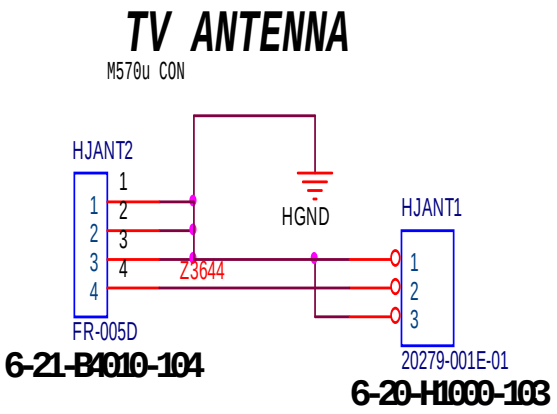
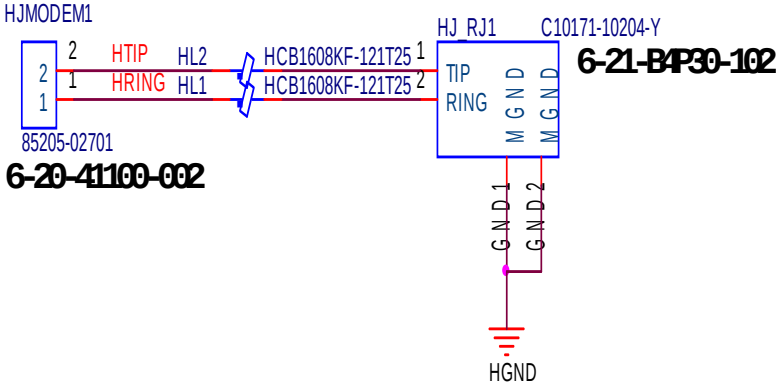
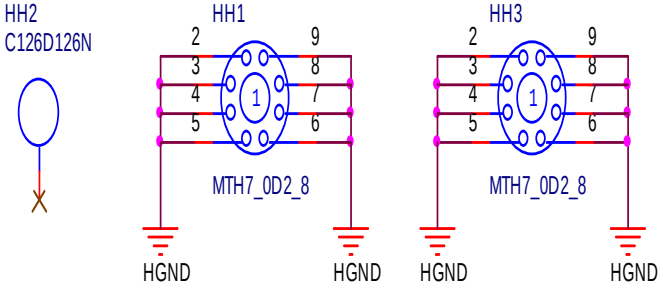
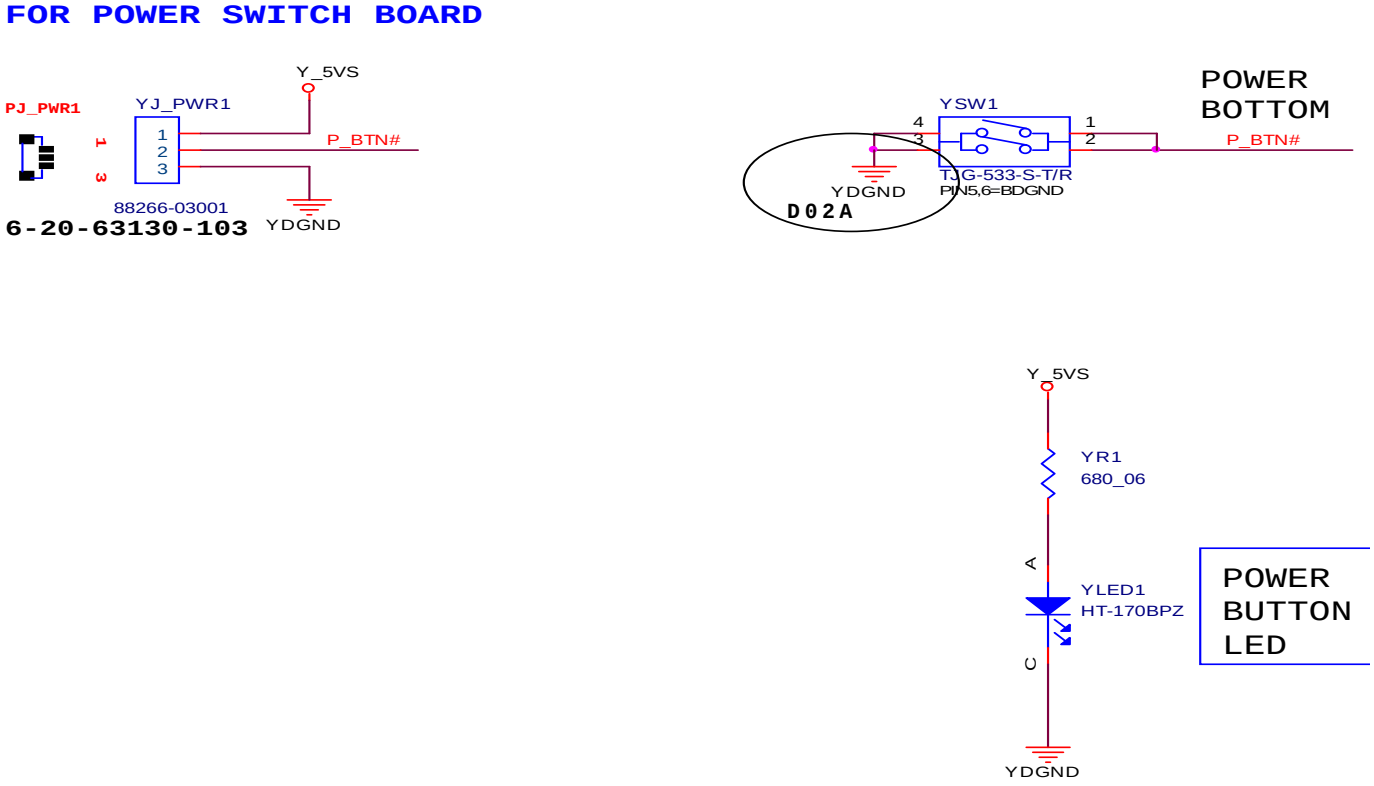
W870CU RJ11 & TV Board







W870CU Power Button Board



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W870CU Power
Button Board

W870CU Right-Logo Board

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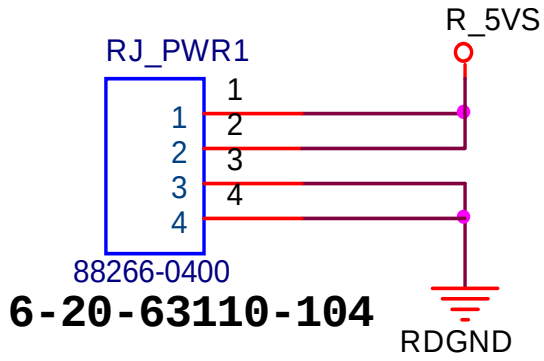
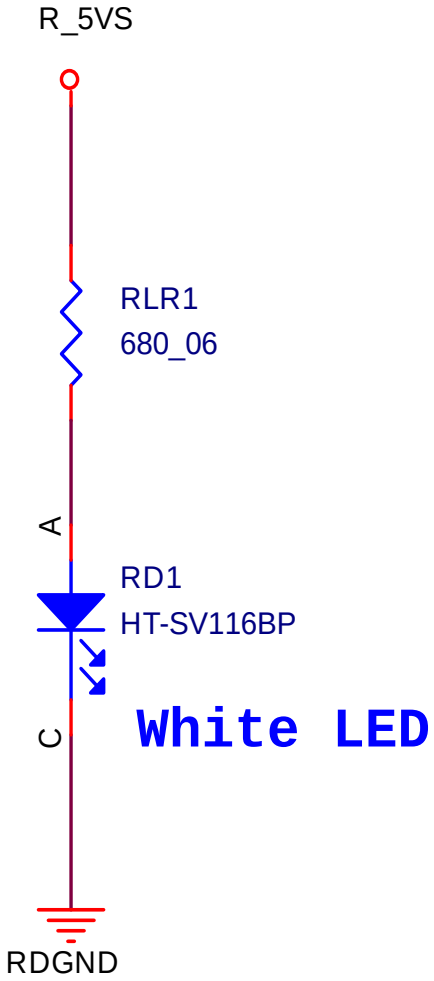
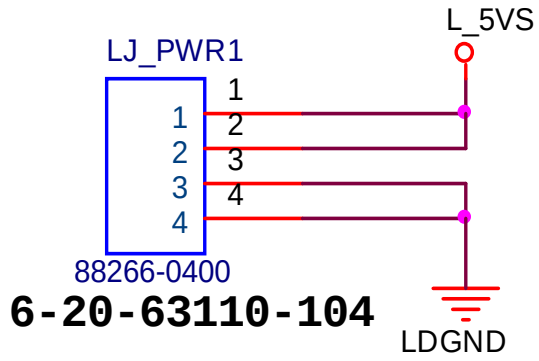
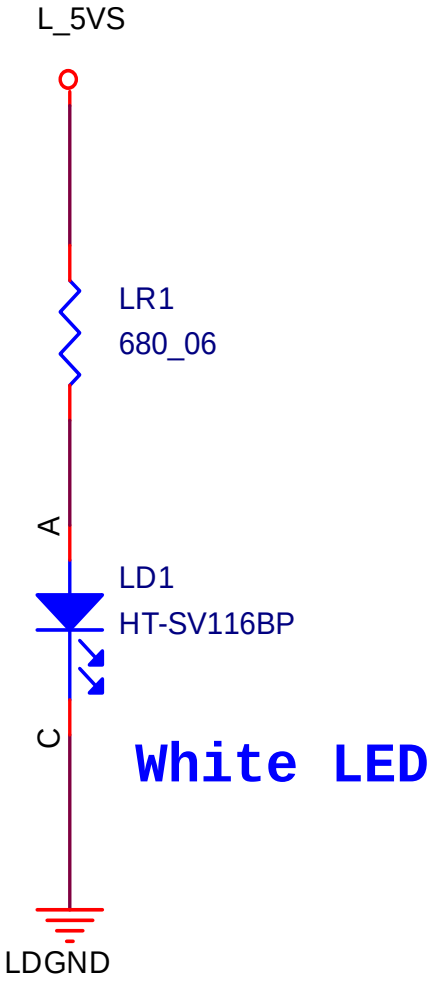
W870CU Right-Logo Board





W870CU Left-Logo Board





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W870CU Left-Logo Board

W870CU Touch Sensor Board

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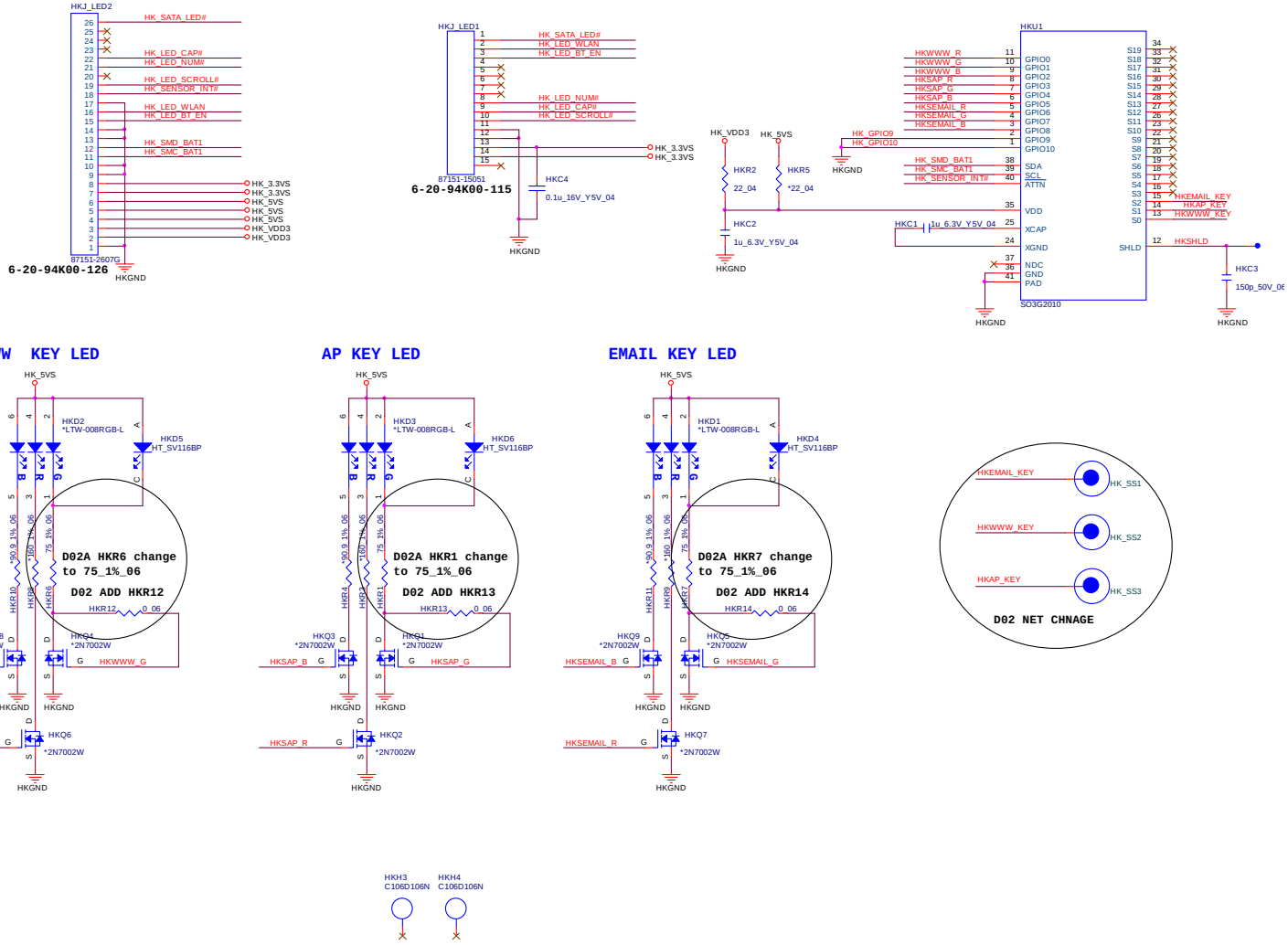
W870CU Touch Sensor Board



Appendix C:Updating the FLASH ROM BIOS

To update the FLASH ROM BIOS you must:

- Download the BIOS update from the web site.
- Unzip the files onto a bootable CD/DVD/USB Flash Drive.
- Reboot your computer from an external CD/DVD/USB Flash Drive.
- Use the flash tools to update the flash BIOS using the commands indicated below.
- Restart the computer booting from the HDD and press **F2** at startup enter the BIOS.
- Load setup defaults from the BIOS and save the default settings and exit the BIOS to restart the computer.
- After rebooting the computer you may restart the computer again and make any required changes to the default BIOS settings.

Download the BIOS

1. Go to **www.clevo.com.tw** and point to **E-Services** and click **E-Channel**.
2. Use your user ID and password to access the appropriate download area (BIOS), and download the latest BIOS files (the BIOS file will be contained in a batch file that may be run directly once unzipped) for your computer model (**see sidebar for important information on BIOS versions**).

Unzip the downloaded files to a bootable CD/DVD/ or USB Flash drive

1. Insert a bootable CD/DVD/USB flash drive into the CD/DVD drive/USB port of the computer containing the downloaded files.
2. Use a tool such as Winzip or Winrar to unzip all the BIOS files and refresh tools to your bootable CD/DVD/USB flash drive (you may need to create a bootable CD/DVD with the files using a 3rd party software).

Set the computer to boot from the external drive

1. With the bootable CD/DVD/USB flash drive containing the BIOS files in your CD/DVD drive/USB port, restart the computer and press **F2** (in most cases) to enter the BIOS.
2. Use the arrow keys to highlight the **Boot** menu.
3. Use the “+” and “-” keys to move boot devices up and down the priority order.
4. Make sure that the CD/DVD drive/USB flash drive is set first in the boot priority of the BIOS.
5. Press **F10** to save any changes you have made and exit the BIOS to restart the computer.

BIOS Version

Make sure you download the latest correct version of the BIOS appropriate for the computer model you are working on.

You should only download BIOS versions that are V1.01.XX or higher as appropriate for your computer model.

Note that BIOS versions are not backward compatible and therefore **you may not downgrade your BIOS to an older version** after upgrading to a later version (e.g if you upgrade a BIOS to ver 1.01.05, you **MAY NOT** then go back and flash the BIOS to ver 1.01.04).

Use the flash tools to update the BIOS

1. Make sure you are not loading any memory management programs such as HIMEM by holding the **F8** key as you see the message "**Starting MS-DOS**". You will then be prompted to give "**Y**" or "**N**" responses to the programs being loaded by DOS. Choose "N" for any memory management programs.
2. You should now be at the DOS prompt e.g: DISK **C**:\> (C is the designated drive letter for the CD/DVD drive/USB flash drive).
3. **Type the following command** at the DOS prompt:

   C:\> Flash.bat

4. The utility will then proceed to flash the BIOS.
5. You should then be prompted to press any key to restart the system or turn the power off, and then on again but make sure you remove the CD/DVD/USB flash drive from the CD/DVD drive/USB port before the computer restarts.

Restart the computer (booting from the HDD)

1. With the CD/DVD/USB flash drive removed from the CD/DVD drive/USB port the computer should restart from the HDD.
2. Press **F2** as the computer restarts to enter the BIOS.
3. Use the arrow keys to highlight the **Exit** menu.
4. Select **Load Setup Defaults** (or press **F9**) and select "**Yes**" to confirm the selection.
5. Press **F10** to save any changes you have made and exit the BIOS to restart the computer.

Your computer is now running normally with the updated BIOS

You may now enter the BIOS and make any changes you require to the default settings.